MULTIPLE CHOICE QUESTION PAPER

Paper number **APEH 3.01** Please insert this reference number in the appropriate boxes on your candidate answer sheet	**Time allocation** 60 minutes

Title

MOCK PAPER
Level 3
Anatomy and Physiology
For Exercise and Health

Unit Accreditation Number A/600/9051

Special Instructions

This theory paper comprises questions that are indicative to the Level 3 Anatomy and Physiology for Exercise and Health unit. It contains questions that are phrased as standard multiple choice, pictorial, fill the blanks and/or complete the sentence style questions. Answers should be recorded as either a, b, c or d.

The questions within this paper are proportionate to the assessment criteria within the unit and relate to the following:

- Heart and circulatory system
- Musculoskeletal system
- Posture and core stability
- Nervous system
- Endocrine system
- Energy systems

This theory paper has 40 marks. A **minimum total of 28 marks overall (70%)** is required in order to pass.

Important: Please do not write on this paper.

Q1

Which of the following training methods is most effective for improving the efficiency of fat burning pathways? (1 mark)

a. Long-duration continuous training

b. High-intensity Fartlek training

c. Anaerobic interval training

d. Sprint interval training

Q2

What is the function of the semi-lunar valves? (1 mark)

a. They prevent backflow of blood into the Atria

b. They prevent backflow of blood into the ventricles

c. They prevent backflow of blood into the Aorta

d. They prevent backflow of blood into the Pulmonary artery

Q3

When performing a supine leg raise, what muscle is the prime mover? (1 mark)

a. Rectus abdominis

b. Vastus medialis

c. Gluteus maximus

d. Psoas major

Q4

Strengthening which muscles can help to correct lordosis? (1 mark)

a. Muscles that retract the scapula

b. Muscles that tilt the pelvis backwards

c. Muscles that protract the scapula

d. Muscles that tilt the pelvis forwards

Q5

What effect does atherosclerosis have on blood flow through arteries? (1 mark)

a. It decreases resistance to blood flow, thus increasing blood pressure

b. It increases resistance to blood flow, thus decreasing blood pressure

c. It increases resistance to blood flow, thus increasing blood pressure

d. It decreases resistance to blood flow, thus decreasing blood pressure

Q6

Which of the following developmental postural adaptations has the greatest impact upon normal breathing patterns? (1 mark)

a. Kyphosis

b. Flat back

c. Lordosis

d. Scoliosis

Q7

For clients with mild hypertension, what type of training can lead to a long-term reduction in resting blood pressure? (1 mark)

a. Cardiovascular

b. Motor skills

c. Flexibility

d. Muscular strength

Q8

Which of the following describes the joint between the humerus and ulna? (1 mark)

a. A gliding joint allowing supination and pronation

b. A hinge joint allowing flexion and extension

c. A condyloid joint allowing abduction and adduction

d. A pivot joint allowing internal and external rotation

Q9

Which of the following is a health risk associated with hypertension? (1 mark)

a. Reduced bone density

b. Osteoarthritis

c. Coronary heart disease

d. Type 1 diabetes

Q10

Which of the following is the deepest layer of connective tissue within skeletal muscle? (1 mark)

a. Periosteum

b. Perimysium

c. Epimysium

d. Endomysium

Q11

Which of the following describes the articulation at the pubis symphysis? (1 mark)

a. A cartilaginous joint with limited movement

b. A fixed joint with no movement

c. A synovial joint with excessive movement

d. A saddle joint with free movement

Q12

What effect will long-term strength training have on type 2 muscle fibres? (1 mark)

a. Atrophy

b. Hypertrophy

c. Hyperplasia

d. Articulation

Q13
Which of the following muscles attaches to the femur and calcaneus? (1 mark)

a. Rectus femoris

b. Tibialis anterior

c. Gastrocnemius

d. Soleus

Q14
Which of the following best describes coronary circulation? (1 mark)

a. Arteries carrying de-oxygenated blood from the myocardium to the aorta

b. Arteries carrying oxygenated blood from the aorta to the myocardium

c. Veins carrying oxygenated blood from the aorta to the myocardium

d. Veins carrying de-oxygenated blood from the myocardium to the aorta

Q15
Which exercise uses movement in the transverse plane? (1 mark)

a. Torso rotation

b. Knee extension

c. Side leg raise

d. Bicep curl

Q16

What actions are performed by the Tensor fascia latae shown in the picture? (1 mark)

a. Adduction and external (lateral) rotation of the hip

b. Flexion and internal (medial) rotation of the hip

c. Extension and internal (medial) rotation of the hip

d. Elevation and external (lateral) rotation of the hip

Q17

Which of the following happen during a cardiovascular training session? (1 mark)

a. Stroke volume and cardiac output both decrease

b. Stroke volume increases and cardiac output decreases

c. Stroke volume and cardiac output both increase

d. Stroke volume decreases and cardiac output increases

Q18

Which of the following best describes the process of motor unit recruitment? (1 mark)

a. An efferent nerve impulse triggers some of the fibres in the motor unit to contract

b. An afferent nerve impulse triggers all of the fibres in the motor unit to contract

c. An afferent nerve impulse triggers some of the fibres in the motor unit to contract

d. An efferent nerve impulse triggers all of the fibres in the motor unit to contract

Q19

Which by-product of the energy systems can cause muscle fatigue? (1 mark)

a. Hydrogen ions

b. Water

c. Creatine phosphate

d. Oxygen

Q20

Which of the following is a 'global' stabilising muscle of the spine? (1 mark)

a. Transverse abdominis

b. External oblique

c. Multifidus

d. Pelvic floor

Q21

What structure forms the junction between a neuron and a target cell? **(1 mark)**

a. Synapse

b. Cell nucleus

c. Axon

d. Cell body

Q22

Excessive abdominal adiposity is most associated with what type of postural deviation? (1 mark)

a. Kyphosis

b. Spondylosis

c. Scoliosis

d. Lordosis

Q23
Which of the following can cause the valsalva effect? (1 mark)

a. Dynamic stretching

b. Long duration aerobic training

c. Exercising immediately after a meal

d. Holding breath during exertion

Q24
What is arteriosclerosis? (1 mark)

a. A disease that causes rupturing of the arteries

b. A disease that causes softening of the arteries

c. A disease that causes hardening of the arteries

d. A disease that causes leaking of the arteries

Q25
What type of stretching has the lowest risk of injury? (1 mark)

a. Dynamic

b. Ballistic

c. PNF

d. Static

Q26
Increased heart rate during exercise is brought about by which of the following? (1 mark)

a. Sympathetic action of the somatic nervous system

b. Parasympathetic action of the autonomic nervous system

c. Sympathetic action of the autonomic nervous system

d. Parasympathetic action of the somatic nervous system

Q27

What common muscle imbalance can develop, leading to insufficient core stabilisation? (1 mark)

a. Dominant and weaker muscles both lengthen

b. Dominant and weaker muscles both tighten

c. Dominant muscles lengthen and weaker muscles tighten

d. Dominant muscles tighten and weaker muscles lengthen

Q28

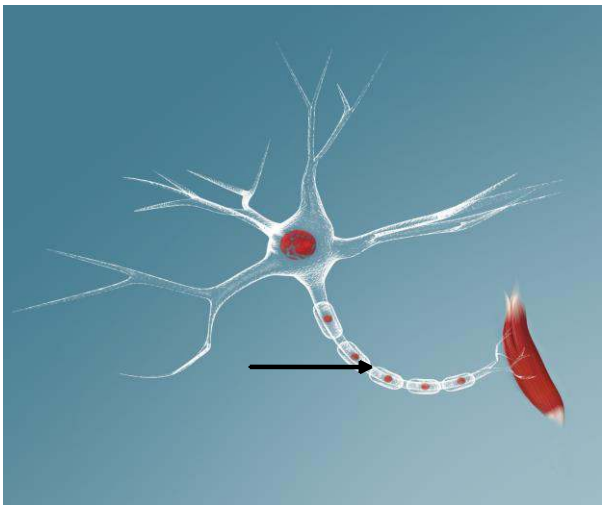
In the following picture of a nerve cell, which structure is the arrow pointing to? (1 mark)

a. Nucleus

b. Muscle fibre

c. Axon

d. Dendrite



Q29

As the agonist contracts, the antagonist muscle relaxes to allow movement. What is this occurrence known as? (1 mark)

a. Reciprocal inhibition

b. Golgi tendon organ

c. Passive resistance

d. Inverse stretch reflex

Q30
During the eccentric phase of a press up, what movement occurs at the scapula? (1 mark)

a. Protraction

b. Elevation

c. Depression

d. Retraction

Q31
What is the function of muscle spindle cells? (1 mark)

a. They respond to excessive lengthening of the muscle

b. They respond to excessive contraction of the muscle

c. They respond to excessive heat within the muscle

d. They respond to excessive lactic acid within the muscle

Q32
What is the role of a motor unit? (1 mark)

a. To contract a single muscle in response to a nerve impulse

b. To relax a group of muscle fibres in response to a nerve impulse

c. To contract a group of muscle fibres in response to a nerve impulse

d. To relax a single muscle fibre in response to a nerve impulse

Q33
Where are catecholamines produced? (1 mark)

a. Pancreas

b. Adrenal glands

c. Thyroid gland

d. Ovaries

Q34
Improved neuromuscular efficiency can lead to which of the following benefits? (1 mark)

a. Better cardiovascular fitness

b. Reduced risk of coronary heart disease

c. Increased bone density

d. Faster reaction times

Q35
What term means: 'maintaining balance or returning a system to functioning within its normal range'? (1 mark)

a. Homeostasis

b. Glycolysis

c. Hypertension

d. Metabolism

Q36
Which of the following is a neuromuscular adaptation associated with training? (1 mark)

a. Reduced frequency of nerve impulses to motor units

b. Increased need for conscious control of movement

c. Better inter-muscular coordination during movement

d. Unsynchronised recruitment of motor units

Q37
Which hormone causes the conversion of glycogen to glucose to raise blood sugar level? (1 mark)

a. Testosterone

b. Oestrogen

c. Glucagon

d. Insulin

Q38

Which of the following best describes onset of blood lactate accumulation (OBLA)? (1 mark)

a. The intensity at which lactic acid in the muscles reduces and the aerobic system starts to contribute energy.

b. The intensity at which the lactic acid system provides all of the energy being used.

c. The intensity at which lactate is first produced in the muscles.

d. The intensity at which lactate is being produced in the muscles faster than it can be cleared.

Q39

What structures within skeletal muscle tissue bring about contraction? (1 mark)

a. Actin and myosin filaments

b. Epimysium and perimysium

c. Tendon and fascia

d. Regular collagen fibres

Q40

What is the function of the aortic valve? (1 mark)

a. It prevents backflow of blood into the right ventricle

b. It prevents backflow of blood into the left ventricle

c. It prevents backflow of blood into the left atrium

d. It prevents backflow of blood into the right atrium