



VTCT - UV30536 Anatomy and physiology for exercise and health

Single unit assessment

Multiple choice question paper

(Mock paper) Time: Up to: 2 hours

**PLEASE COMPLETE THE FOLLOWING BOXES IN BLACK OR BLUE INK.
USE BLOCK CAPITALS. DO NOT USE PENCIL.**

Learner registration number/ULN										
Centre number										
Learner surname										
Other names										
Signature										
Date										
Attempt 1		Attempt 2		Attempt 3						

**PLEASE READ THE TEXT BELOW VERY CAREFULLY
BEFORE ATTEMPTING ANY OF THE ASSESSMENT**
You will need no other materials

Instructions to learners

- You must write only in blue or black ink.
- Answer all questions by marking an **X** in the appropriate box.
- At the end of the test this paper must be handed in to the supervisor/invigilator.
- **Do not open this paper until told to do so by the supervisor/invigilator.**

Advice to learners

- Read each question carefully and answer as many questions as you can.
- Questions may be attempted in any order.

Internal Verification YES / NO	
Internal verifier	
Date and Comments	

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1 In which plane of movement does rotation of the spine occur?

- A Frontal
- B Sagittal
- C Lateral
- D Transverse

2 Which joint actions occur in the downward phase of a wide grip lat pull down?
Elbow

- A flexion and shoulder adduction
- B extension and shoulder flexion
- C extension and shoulder abduction
- D flexion and shoulder extension

3 A pronated grip places the hands in which position? Palms

- A facing in
- B facing out
- C facing up
- D facing down

4 What type of joint occurs between the humerus and ulna?

- A Cartilaginous
- B Hinge
- C Condyloid
- D Gliding

5 Which of the following body types is most likely to excel at distance running?

- A Endomorph
- B Ectomorph
- C Mesomorph
- D Somatotype

6 Which of the following can lead to reduced bone density?

- A Low adrenaline (epinephrine) level
- B High testosterone level
- C Low oestrogen level
- D High level of fat in diet

7 Which of the following describes kyphosis? An exaggerated curve in the

- A lumbar spine
- B sacral spine
- C thoracic spine
- D cervical spine

8 Why is the position of the acetabulum within the pelvis important to the function of the hip joint? It makes the hip

- A more reliant on surrounding ligaments for stability
- B very stable to help support body weight
- C very mobile but vulnerable to dislocation
- D more reliant on surrounding muscles for stability

9 What movement is possible at the hinge joint between the tibia and the talus bone?

- A Dorsiflexion
- B Lateral extension
- C Inversion
- D Eversion

10 Which of the following joints move in all three of the anatomical planes?

- A Hip
- B Elbow
- C Ankle
- D Wrist

11 In which plane of movement does hip flexion occur?

- A Frontal
- B Sagittal
- C Lateral
- D Transverse

12 What type of structure is the symphysis pubis?

- A Fascial sheath
- B Organ
- C Tendon
- D Joint

13 What type of joint is the acromio-clavicular joint?

- A Ball and socket
- B Cartilaginous
- C Gliding
- D Hinge

14 How does the glenoid cavity affect function of the shoulder joint? It makes the shoulder

- A less reliant on surrounding muscles for stability
- B very mobile but vulnerable to dislocation
- C less reliant on surrounding ligaments for stability
- D very effective at supporting body weight

15 Which of the following describes a motor unit? A

- A group of muscles working together to create movement
- B sensory neuron that detects muscle movement
- C motor neuron that transmits information to the central nervous system
- D motor neuron and all of the fibres to which it connects

16 Which of the following is a function of the stretch (myotatic) reflex? It

- A prevents a muscle being lengthened too quickly
- B allows a muscle to be lengthened quickly
- C relaxes a muscle that is placed under too much tension
- D decreases tension in a muscle being stretched

17 What type of contraction occurs in the quadriceps when performing the lowering phase of a squat?

- A Eccentric
- B Isokinetic
- C Concentric
- D Isometric

18 Which of the following muscles retracts the scapulae?

- A Rhomboids
- B Deltoids
- C Erector spinae
- D Pectoralis major

19 Which of the following muscles extends and adducts the shoulder?

- A Latissimus dorsi
- B Trapezius
- C Pectoralis minor
- D Deltoid

20 Which one of the following muscles is part of the quadriceps group

- A Supraspinatus
- B Semitendinosus
- C Rectus femoris
- D Gluteus minimus

21 Which of the following muscles extends and externally (laterally) rotates the hip?

- A Vastus lateralis
- B Iliopsoas
- C Gluteus maximus
- D Rectus femoris

22 What muscles make up the 'rotator cuff'? Infraspinatus,

- A serratus anterior, semimembranosus, supraspinatus
- B supraspinatus, teres major, multifidus
- C supraspinatus, subscapularis, teres minor
- D subscapularis, multifidus, serratus anterior

23 Which long-term physiological adaptation will occur as a direct result of long-term aerobic training? Increased

- A resting heart rate
- B blood pressure
- C number of fast twitch muscle fibres
- D capillarisation

24 Which muscle crosses only one joint?

- A Gastrocnemius
- B Rectus femoris
- C Gluteus minimus
- D Semitendinosus

25 What is the name of the irregular collagen sheath that surrounds each individual muscle fibre?

- A Perimysium
- B Epimysium
- C Fascicle
- D Endomysium

26 With which type of muscular contraction is delayed onset of muscular soreness (DOMS) most frequently associated?

- A Isometric
- B Isotonic
- C Eccentric
- D Concentric

27 Which of the following are characteristics of fast twitch muscle fibres? They have a

- A low firing threshold and red appearance
- B low firing threshold and white appearance
- C high firing threshold and red appearance
- D high firing threshold and white appearance

28 What muscle contraction occurs in the biceps brachii during the upward phase of the bicep curl?

- A Eccentric
- B Concentric
- C Isometric
- D Isokinetic

29 To where does the left ventricle pump blood?

- A Muscles
- B Right ventricle
- C Left atrium
- D Lungs

30 Which of the following is a characteristic of all arteries? They

- A transport blood towards the heart
- B transport blood under low pressure
- C have non-return valves
- D have thick muscular walls

31 Where does the left atrium collect from?

- A Left ventricle
- B Right atrium
- C Muscles
- D Lungs

32 Which of the following is a characteristic of all veins? They

- A transport blood under low pressure
- B carry blood away from the heart
- C have thick muscular walls
- D transport oxygenated blood

33 Which muscles are actively involved in inspiration? Diaphragm and

- A external obliques
- B latissimus dorsi
- C external intercostals
- D transversus abdominus

34 What is the formula for calculating cardiac output? Cardiac output = stroke volume x

- A systolic blood pressure
- B heart rate
- C myocardial mass
- D contractility

35 What is the function of the bicuspid (mitral) valve? It prevents backflow of blood from the

- A right ventricle to the right atrium
- B right atrium to the pulmonary arteries
- C left ventricle to the left atrium
- D left atrium to the pulmonary veins

36 What is meant by the term 'blood pressure'? The

- A rate at which the heart is beating
- B amount of blood contained in the veins
- C speed of blood flowing through the circulatory system
- D force exerted by blood pushing against the artery walls

37 How is stroke volume described? The volume of blood

- A expelled from the ventricles in one minute
- B expelled from the ventricles in one beat
- C in the heart after any one contraction
- D in the heart during any one contraction

38 What does the term 'myocardial ischemia' mean? Inadequate

- A contractility from the myocardium
- B nerve supply to the myocardium
- C stroke volume from the myocardium
- D blood supply to the myocardium

39 Which of the following factors reduces the oxygen carrying capacity of the blood?

- A Anaemia
- B Longer duration of diastole
- C Hypertension
- D Wider coronary arteries

40 What happens to the blood pressure during a moderate pace cardiovascular exercise session? Systolic pressure

- A increases. Diastolic pressure remains approximately the same
- B and diastolic pressure increase at the same time
- C remains approximately the same. Diastolic pressure increases
- D and diastolic pressure both remain approximately the same

41 Which of the following does the somatic branch of the nervous system control?

- A Voluntary (skeletal) muscle
- B Involuntary (smooth) muscle
- C Heart rate
- D Breathing rate

42 What effect does testosterone have on the body? It

- A decreases bone density
- B decreases cardiovascular fitness
- C increases the storage of body fat
- D increases growth of lean tissue

43 Which of the following would cause the body to release insulin into the blood?

- A Performing a long, intense exercise session
- B Being anxious, immediately before a sporting competition
- C Eating nothing for several hours
- D Eating carbohydrates of high glycemic index

44 Which of the following would increase heart rate?

- A Parasympathetic action of the autonomic nervous system
- B Parasympathetic action of the somatic nervous system
- C Sympathetic action of the autonomic nervous system
- D Sympathetic action of the somatic nervous system

45 Which of the following methods of flexibility training includes an isometric contraction of the targeted muscle?

- A Dynamic
- B Passive
- C Balistic
- D PNF

46 Which hormone is responsible for increasing blood glucose levels?

- A Glucagon
- B Insulin
- C Glycogen
- D Thyroxine

47 What effect does adrenaline (epinephrine) have on fat in the body? It

- A promotes the storage of fats in the liver
- B mobilises fats from adipose tissue to raise blood glucose levels
- C speeds up conversion of glucose to fats in the blood
- D converts fats into creatine phosphate in the mitochondria

48 Which adaptation can result from regular muscular endurance training?

- A Decreased muscle mass (atrophy)
- B Decreased number of red and white blood cells
- C Increased size of the right ventricle
- D Increased efficiency of slow-twitch muscle fibres

49 The endocrine system consists of glands which produce

- A hormones
- B sebum
- C pancreatic juice
- D bile

50 The basic principles of the endocrine system are to produce chemicals called

- A enzymes and excrete them directly into the digestive system where they are carried to their target organs
- B hormones and excrete them directly into the respiratory system where they are carried to their target organs
- C enzymes and secrete them directly into the urinary system where they are carried to their target organs
- D hormones and secrete them directly into the blood stream where they are carried to their target organs

51 which of the following structures make up the Central Nervous System?

- A Brain and spinal cord
- B Vertebrae and pelvis
- C Legs and arms
- D Skin and hair

52 Nerve cells are known as

- A leucocytes
- B erythrocytes
- C neurones
- D platelets

53 Efferent neurones carry motor nerve impulses

- | | | |
|--------------------------|---|---------------------------------------------------------------------------|
| <input type="checkbox"/> | A | to the Central Nervous System (CNS) from muscles and glands |
| <input type="checkbox"/> | B | from the Central Nervous System (CNS) to muscles and glands |
| <input type="checkbox"/> | C | from skin, organs, muscles and joints to the Central Nervous System (CNS) |
| <input type="checkbox"/> | D | to the Central Nervous System (CNS) from skin, organs, muscles and joints |

54 How many vertebral bones form the thoracic section of the spine?

- | | | |
|--------------------------|---|----|
| <input type="checkbox"/> | A | 5 |
| <input type="checkbox"/> | B | 7 |
| <input type="checkbox"/> | C | 12 |
| <input type="checkbox"/> | D | 10 |

55 The area where the nerve supply enters a muscle and stimulates an action is known as

- | | | |
|--------------------------|---|---------------|
| <input type="checkbox"/> | A | myelin sheath |
| <input type="checkbox"/> | B | sensory nerve |
| <input type="checkbox"/> | C | motor point |
| <input type="checkbox"/> | D | dura mater |

End of Test