



VTCT - UV20522 Anatomy and physiology for exercise

Single unit assessment

Multiple choice question paper

(Mock paper) Time: 1 hour 45 minutes

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						

Marker's use			
Marker's initials			
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
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15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	
Total			

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/invigator.
- **Do not open this paper until told to do so by the supervisor/invigator.**

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	

1 Blood cells are produced in the

- | | | |
|--------------------------|---|-------------|
| <input type="checkbox"/> | A | liver |
| <input type="checkbox"/> | B | pancreas |
| <input type="checkbox"/> | C | bone marrow |
| <input type="checkbox"/> | D | spleen |

2 Veins

- | | | |
|--------------------------|---|---|
| <input type="checkbox"/> | A | never transport oxygenated blood |
| <input type="checkbox"/> | B | have thick muscular walls |
| <input type="checkbox"/> | C | have valves to aid venous return |
| <input type="checkbox"/> | D | transport de-oxygenated blood from the heart to the lungs |

3 The left ventricle pumps blood to the

- | | | |
|--------------------------|---|-----------------|
| <input type="checkbox"/> | A | working muscles |
| <input type="checkbox"/> | B | lungs |
| <input type="checkbox"/> | C | left atrium |
| <input type="checkbox"/> | D | right ventricle |

4 Blood returning from the working muscles enters the heart through the

- | | | |
|--------------------------|---|------------------|
| <input type="checkbox"/> | A | vena cava |
| <input type="checkbox"/> | B | aorta |
| <input type="checkbox"/> | C | pulmonary artery |
| <input type="checkbox"/> | D | pulmonary vein |

5 Blood is transported from the heart to the lungs by the

- | | | |
|--------------------------|---|------------------|
| <input type="checkbox"/> | A | pulmonary vein |
| <input type="checkbox"/> | B | pulmonary artery |
| <input type="checkbox"/> | C | vena cava |
| <input type="checkbox"/> | D | aorta |

6 Arteries

- | | | |
|--------------------------|---|---|
| <input type="checkbox"/> | A | have involuntary muscle walls |
| <input type="checkbox"/> | B | have valves to prevent the backflow of blood |
| <input type="checkbox"/> | C | transport blood from working muscles to the heart |
| <input type="checkbox"/> | D | have thin muscular walls |

7 The bicuspid valve is located between the

- | | | |
|--------------------------|---|------------------------------------|
| <input type="checkbox"/> | A | left ventricle and right ventricle |
| <input type="checkbox"/> | B | right atrium and right ventricle |
| <input type="checkbox"/> | C | left atrium and left ventricle |
| <input type="checkbox"/> | D | left ventricle and aorta |

8 Stroke volume increases when

- | | | |
|--------------------------|---|----------------------------|
| <input type="checkbox"/> | A | heart rate increases |
| <input type="checkbox"/> | B | arteries vasodilate |
| <input type="checkbox"/> | C | venous return is increased |
| <input type="checkbox"/> | D | venous return is decreased |

9 Which one of the following is correct?

- | | | |
|--------------------------|---|---|
| <input type="checkbox"/> | A | The trachea is the site of gaseous exchange |
| <input type="checkbox"/> | B | Carbon dioxide is exchanged for nitrogen in the alveoli |
| <input type="checkbox"/> | C | Exhaled air contains more carbon dioxide than inhaled air |
| <input type="checkbox"/> | D | Inhaled air contains more carbon dioxide than exhaled air |

10 The right lung has

- | | | |
|--------------------------|---|-------------|
| <input type="checkbox"/> | A | one lobe |
| <input type="checkbox"/> | B | two lobes |
| <input type="checkbox"/> | C | three lobes |
| <input type="checkbox"/> | D | four lobes |

11 Which structure has the largest surface area?

- | | | |
|--------------------------|---|-------------|
| <input type="checkbox"/> | A | Trachea |
| <input type="checkbox"/> | B | Alveoli |
| <input type="checkbox"/> | C | Bronchi |
| <input type="checkbox"/> | D | Bronchioles |

12 The thoracic spine is comprised of

- | | | |
|--------------------------|---|------------------|
| <input type="checkbox"/> | A | four vertebrae |
| <input type="checkbox"/> | B | five vertebrae |
| <input type="checkbox"/> | C | six vertebrae |
| <input type="checkbox"/> | D | twelve vertebrae |

13 Which one of the following is correct? a

- A hinge joint can flex, extend and rotate
- B ball and socket joint can flex, abduct and adduct
- C gliding joint can flex, extend and circumduct
- D pivot joint can circumduct

14 Which of the following is a sesamoid bone?

- A Radius
- B Vertebra
- C Patella
- D Scapula

15 Osteoclasts

- A break down bony tissue
- B produce calcium
- C produce bony tissue
- D ingest and remove bacteria

16 What are synovial joints commonly known as?

- A Immoveable joints
- B Freely moveable joints
- C Semi-moveable joints
- D Fixed joints

17 Lordosis is an exaggerated curve with increased concavity in which section of the vertebral column?

- A Cervical
- B Thoracic
- C Lumbar
- D Sacral

18 Which one of the following is correct?

- A Ligaments attach muscles to bone
- B The synovial membrane produces synovial fluid
- C Ligaments secrete synovial fluid
- D Tendons attach bone to bone

19 Which one of the following is correct? The

- A cervical spine extends and laterally flexes
- B hip flexes, everts and inverts
- C knee flexes, extends and adducts
- D ankle flexes, extends and internally rotates

20 Which one of the following is correct?

- A cardiac muscle is non-striated
- B smooth muscle is under voluntary control
- C skeletal muscle is striated
- D skeletal muscle is under involuntary control

21 When a muscle concentrically contracts the sarcomere

- A twitches
- B shortens
- C lengthens
- D stays the same length

22 When performing a seated leg extension which of the following is the agonist?

- A Quadriceps
- B Hamstrings
- C Adductors
- D Abductors

23 The latissimus dorsi

- A abduct the arms
- B elevate the shoulders
- C protract the shoulder blades
- D adduct the arms

24 Which one of the following is correct? if the

- A triceps contract isometrically there will be extension at the elbow joint
- B hamstrings contract concentrically there will be extension at the knee joint
- C anterior tibialis contracts concentrically there will be dorsiflexion at the ankle joint
- D biceps contract eccentrically there will be flexion at the elbow joint

25 The gastrocnemius

- A plantar flexes the ankle joint
- B dorsiflexes the ankle joint
- C everts the ankle joint
- D inverts the ankle joint

26 The deltoid

- A flexes the elbow joint
- B internally rotates the shoulder joint
- C extends the elbow joint
- D abducts the shoulder joint

27 Antenatal women experience

- A reduced anterior pelvic tilt
- B strengthened abdominal muscles
- C a reduced lumbar lordosis
- D increased anterior pelvic tilt

28 People over 50 years of age experience

- A increased bone density
- B muscle atrophy
- C increased ligament strength
- D muscle hypertrophy

29 Which one of the following is correct?

- A Tibialis anterior is located at the back of the lower leg
- B Rectus femoris is one of the quadriceps group
- C Soleus crosses the knee joint and ankle joint
- D Vastus medialis oblique flexes the knee joint

30 Which one of the following is correct?

- A Red meat is a good source of Vitamin C
- B Pasta is a good source of protein
- C Fat is responsible for body insulation
- D All vegetables contain large amounts of protein

31 Carbohydrate is stored in the liver as

- A protein
- B lactate
- C amino acids
- D glycogen

32 High intensity activity lasting 6-10 seconds is primarily fuelled by the

- A creatine phosphate system
- B glycolytic system
- C aerobic system
- D kreb's cycle

33 Which of the following is a by-product of the aerobic system?

- A Glycogen
- B Carbon dioxide
- C Oxygen
- D Nitrogen

34 What is the energy yield for 1 gram of carbohydrate?

- A 9 kcal
- B 7 kcal
- C 5 kcal
- D 4 kcal

35 Which of the following is a component of the peripheral nervous system?

- A Spinal cord
- B Brain stem
- C Motor neurons
- D Brain

36 Slow twitch muscle fibres are

- A white in colour
- B blue in colour
- C associated with aerobic energy production
- D associated with anaerobic energy production

37 Hyperplasia is defined as an increase in

- A muscle size
- B the number of muscle fibres
- C the number of red blood cells
- D the number of motor units

38 Which one of the following would primarily use isometric contractions?

- A Extending the hip
- B Jogging
- C Maintaining an upright posture
- D Slowly adducting the shoulder, from an abducted position

39 The walls of arteries are made up of

- A striated muscle
- B skeletal muscle
- C cardiac muscle
- D smooth muscle

40 Which one of the following represents a healthy measurement for diastolic blood pressure?

- A 180
- B 140
- C 120
- D 80

41 Which one of the following is the formula for calculating cardiac output?

- A Heart rate x systolic blood pressure
- B Stroke volume x diastolic blood pressure
- C Diastolic blood pressure x systolic blood pressure
- D Heart rate x stroke volume

42 A joint is formed when the following bones meet

- A scapula and humerus
- B ulna and ilium
- C clavicle and tarsals
- D cervical vertebrae and lumbar vertebrae

43 The trapezius muscle

- A flexes the lumbar spine
- B elevates the shoulders
- C depresses the humerus
- D flexes the shoulder

44 Where are WBC manufactured?

- A The Brain
- B The Liver
- C The Kidneys
- D The Bone Marrow

45 Transversus abdominus is located

- A beneath the quadriceps
- B beneath the obliques
- C beneath the hamstrings
- D beneath the trapezius

46 Type IIb muscle fibres

- A power high intensity activities
- B power low intensity activities
- C are fatigue resistant
- D use fat as the major fuel source

47 What is the muscular wall of the heart called?

- A Perimysium
- B Epimysium
- C Myocardium
- D Pericardium

48 What is the function of blood platelets?

- A Transporting oxygen
- B Clotting of blood
- C Fighting infection
- D Eliminating carbon dioxide

49 What is the correct name for the windpipe?

- | | | |
|--------------------------|---|---------|
| <input type="checkbox"/> | A | Trachea |
| <input type="checkbox"/> | B | Larynx |
| <input type="checkbox"/> | C | Pharynx |
| <input type="checkbox"/> | D | Bronchi |

50 Venules are located between the

- | | | |
|--------------------------|---|----------------------------|
| <input type="checkbox"/> | A | capillaries and veins |
| <input type="checkbox"/> | B | arteries and arterioles |
| <input type="checkbox"/> | C | capillaries and arterioles |
| <input type="checkbox"/> | D | capillaries and arteries |

End of Test