

0565/1/2022

H.BIO O/L

**SOUTH WEST REGIONAL MOCK EXAMINATION  
GENERAL EDUCATION**

The Teachers' Resource Unit (TRU) in collaboration with the Regional Pedagogic Inspectorates and the Subject Teachers' Association (STA)	<b>Subject Code</b> 0565	<b>Paper Number</b> 1
CANDIDATE NAME ..... CANDIDATE NUMBER ..... CENTRE NUMBER .....	<b>Subject Title</b>  <b>HUMAN BIOLOGY</b>	
ORDINARY LEVEL	<b>DATE</b> 29/03/2022	

**Time Allowed: One hour thirty minutes**

**INSTRUCTIONS TO CANDIDATES:**

1. USE A SOFT HB PENCIL THROUGHOUT THIS EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

**Before the Examination begins:**

3. Check that this question booklet is headed "Ordinary Level – 0565 HUMAN BIOLOGY, Paper 1".
4. Insert the information required in the spaces provided above.
5. Without opening the booklet, pull out the answer sheet carefully from inside the front cover of this booklet. Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.
6. Insert the information required in the spaces provided on the answer sheet using your HB pencil:  
**Candidate Name, Centre Number, Candidate Number, Subject Code Number and Paper Number.**

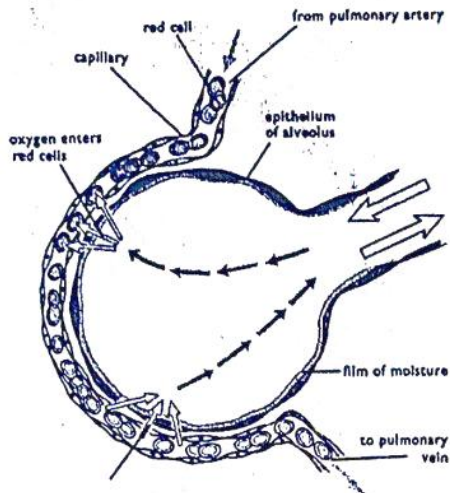
**How to answer questions in this examination:**

7. Answer ALL the 50 questions in this examination. All questions carry equal marks.
8. Non-programmable calculators are allowed.
9. For each question there are four suggested answers, A, B, C, and D. Decide which answer is correct. Find the number of the question on the Answer sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen. For example, if C is your correct answer, mark C as shown below:

( A ) ( B ) ( ~~C~~ ) ( D )

10. Mark only one answer for each question. If you mark more than one answer, you will score zero for that question. If you change your mind about an answer, erase the first mark carefully, and then mark your new answer.
11. Avoid spending much time on any question. If you find a question difficult, move to the next question. You can come back to this question later.
12. Do all rough work in this booklet using, where necessary, the blank spaces in the question booklet.
13. Mobile phones are **NOT ALLOWED** in the examination room.
14. You must not take this booklet and answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination

1. The diagram below shows gaseous exchange at the lung alveolus.

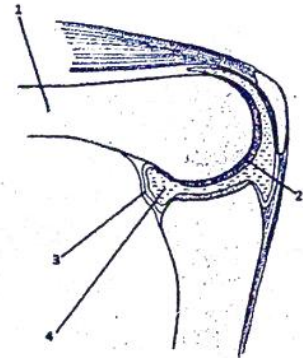


By what process does oxygen enter the red blood cell?

- A) Inspiration  
 B) Diffusion  
 C) Active transport  
 D) Passive transport
- 2) Man is different from other mammals in that:  
 A) His forelimbs have opposable thumbs  
 B) He has heterodont dentition  
 C) He has a four-chambered heart  
 D) He is homoeothermic
- 3) Which cell organelle is correctly matched with its function?  
 A) Nucleus – site of energy release  
 B) Lysosome – site of protein synthesis  
 C) Mitochondrion – site of ATP production  
 D) Golgi apparatus – site of intracellular digestion
- 4) Identify a place in the human body where you would find ciliated columnar epithelium  
 A) Skin epidermis  
 B) Ileum wall  
 C) Lining of the alveolus  
 D) Lining of the oviduct
- 5) Which of the following is a role of meiosis in humans?  
 A) Formation of reproductive cells  
 B) Formation of somatic cells  
 C) Growth and replacement of lost or damaged cells  
 D) Maintaining the diploid chromosome number

- 6) A spongy bone differs from a compact bone in that  
 A) It is arranged in concentric circles called lamellae  
 B) It has only microscopic spaces between the lamellae  
 C) Its cavity is filled with red bone marrow  
 D) It is found in the outer portions of bones
- 7) Skeletal muscles  
 A) Have spindle-shaped fibres  
 B) Have branched and intercalated fibres  
 C) Are under involuntary nervous control  
 D) Have elongated fibres with cross-striations

- 8) The diagram below shows a section through a hinge joint of the knee.



Which two numbered structures prevent friction at this joint?

- A) 1 and 4  
 B) 2 and 3  
 C) 2 and 4  
 D) 3 and 4
- 9) The correct path taken by a nerve impulse in a reflex action is  
 A) Receptor → sensory neurone → relay neurone → motor neurone → effector  
 B) Effector → sensory neurone → relay neurone → motor neurone → receptor  
 C) Receptor → sensory neurone → motor neurone → relay neurone → synapse  
 D) Synapse → receptor → relay neurone → motor neurone → response
- 10) The part of the human brain that controls learning and memory is the  
 A) Medulla oblongata  
 B) Hypothalamus  
 C) Cerebellum  
 D) Cerebrum

22) Identify a correct difference between blood plasma and lymph

	Blood plasma	Lymph
A)	It flows from the tissues to the heart	It flows to and away from the heart
B)	It contains red blood cells and platelets	It lacks red blood cells and platelets
C)	It contains fewer digestive nutrients	It contains more digestive nutrients
D)	It flows under low pressure	It flows under high pressure

23) Which one of the following pairs of blood vessels carry oxygenated blood?

- A) Pulmonary artery and umbilical artery
- B) Pulmonary vein and umbilical artery
- C) Pulmonary vein and umbilical vein
- D) Umbilical artery and umbilical vein

24) Arteries differ from veins in that they

- A) have thin muscular and less elastic walls
- B) have larger lumens
- C) all transport deoxygenated blood
- D) have thick muscular and elastic walls

25) A rise in the body temperature of humans can be regulated by

- A) Vasodilation of the skin arterioles and sweat production
- B) Vasoconstriction of the skin arterioles and sweat production
- C) Vasodilation of the skin arterioles and shivering
- D) Vasodilation of the skin arterioles and increased metabolic rate

26) The amount of water and salt in the human body is regulated by which homeostatic organ?

- A) The lungs
- B) The skin
- C) The kidneys
- D) The liver

27) Urine formation in the kidney nephron requires three main processes which are

- A) Ultrafiltration, selective reabsorption and active transport
- B) Ultrafiltration, selective reabsorption and tubular secretion
- C) Ultrafiltration, osmosis and active transport
- D) Ultrafiltration, diffusion and active transport

28) The process by which the human liver converts excess amino acids into urea is called

- A) Desaturation
- B) Detoxification
- C) Transamination
- D) Deamination

29) The final step in the blood clotting mechanism is the

- A) Lysis of the platelets on exposure to air
- B) Conversion of prothrombin to thrombin
- C) Conversion of fibrinogen to fibrin
- D) Production of calcium ions and vitamin K in the liver

30) A person with type AB blood can safely receive a transfusion of

- A) Type AB blood only
- B) Type O blood only
- C) Type A, B, AB and O blood
- D) Type A and type B blood

31) In the mammalian female reproductive system, what is the function of the oviduct?

- A) Site of implantation of the embryo
- B) Site of fertilization of the egg cell
- C) Site of production of female hormones
- D) Site of attachment of ovarian ligaments

32) Which contraceptive method is effective at preventing fertilization and protecting against sexually transmissible infections?

- A) Contraceptive pills
- B) Intrauterine device
- C) Condom
- D) Diaphragm

33) The process of formation of the male gamete and the female gamete in humans are respectively known as

- A) Spermatogenesis and oogenesis
- B) Spermatogenesis and ovulation
- C) Ejaculation and oogenesis
- D) Orgasm and ovulation

34) Which of the following indicates that the birth process is about to begin?

- A) The foetus lying head downwards in the uterus
- B) The breaking of the amnion to release amniotic fluid
- C) The dilation of the cervix and vagina
- D) The production of oxytocin by the pituitary gland

11) Which two structures in the mammalian eye refract light rays at the greatest angle?

- A) Cornea and retina
- B) Cornea and lens
- C) Retina and lens
- D) Iris and the pupil

12) Endocrine responses differ from nervous responses in that they are

- A) More rapid
- B) Electrochemical in nature
- C) Of longer duration
- D) Of shorter duration

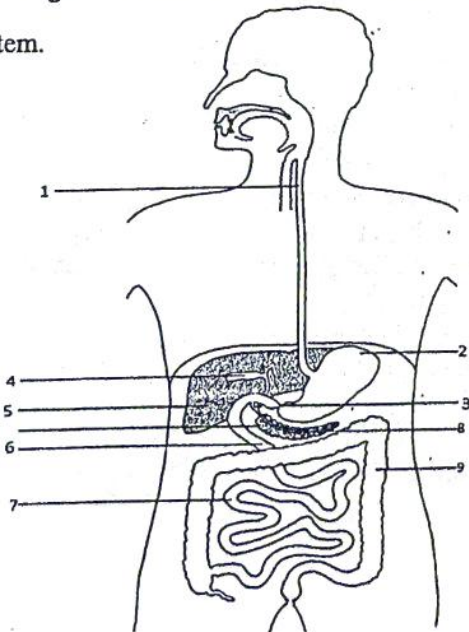
13) The hormone which monitors and regulates excess blood sugar level is known as

- A) Glucagon
- B) Insulin
- C) Adrenaline
- D) Thyroxine

14) The presence of fats in a food sample can be detected using

- A) Millon's reagent
- B) Biuret's reagent
- C) Sudan III solution
- D) Fehling's solution

15) The diagram below is that of the human digestive system.



Which is the site for reabsorption of water?

- A) 8
- B) 2
- C) 7
- D) 9

For questions 16 – 19, one or more of the response is/are correct. Decide which of the responses are/is correct and then choose

- A) If 1, 2 and 3 are all correct
- B) If 1 and 2 only are correct
- C) If 2 and 3 only are correct
- D) If 1 only is correct

16) Enzymes are

- 1. Protein in nature
- 2. Specific in their action
- 3. Denatured by high temperature

17) The ileum is adapted for absorption by

- 1. Being long and narrow to increase the surface area
- 2. Having finger-like projections
- 3. Having thick and impermeable walls.

18) In the kidney nephron

- 1. Selective reabsorption occurs in the Bowman's capsule
- 2. The afferent arteriole is wider in diameter than the efferent arteriole
- 3. Ultrafiltration occurs within the glomerulus

19) In active immunity

- 1. The lymphocytes manufacture antibodies in response to the antigen
- 2. An individual is injected with antibodies from an external source
- 3. The body is provided with short-term protection against pathogens

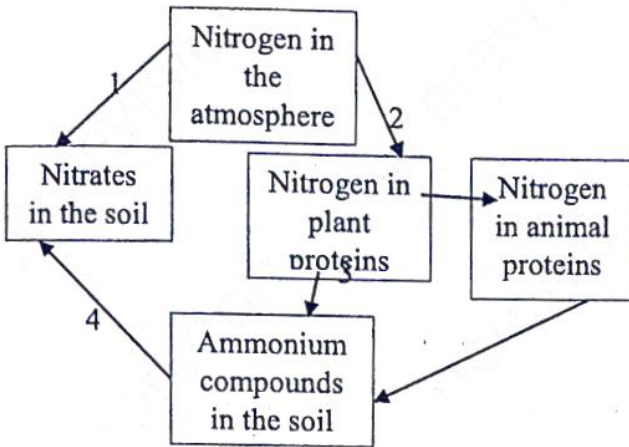
20) The part of the human respiratory system containing rings of cartilage is known as the

- A) Trachea
- B) Bronchus
- C) Alveolus
- D) Larynx

21) What happens during the process of inspiration?

- A) The internal intercostal muscle contracts
- B) The rib cage moves downwards and inwards
- C) The volume of the thoracic cavity increases
- D) The air pressure inside the lungs rises

35) The scheme below illustrates the nitrogen cycle



The natural process represented by the arrow 2 is

- A) Nitrification  
 B) Denitrification  
 C) Nitrogen fixation  
 D) Lightning
- 36) Identify an air pollutant that contributes to the depletion of the ozone layer in the stratosphere  
 A) Nitrogen dioxide  
 B) Carbon dioxide  
 C) Chlorofluorocarbons  
 D) Sulphur dioxide
- 37) Rising damp in the walls of houses is due to  
 A) defective roofing  
 B) Lack of a damp-proof course  
 C) Cracks in the walls  
 D) Broken gutters around the walls
- 38) A cholera disease that attacks so many people within a short period of time, leading to many deaths is described as being  
 A) An epidemic outbreak  
 B) A pandemic outbreak  
 C) An endemic outbreak  
 D) A sporadic outbreak
- 39) The phenotype of an organism describes  
 A) Its homozygous or heterozygous nature  
 B) Its allele combination  
 C) Its visible traits  
 D) Its gene composition

40) In humans, brown eye colour is dominant to blue eye colour. The allele for brown eye colour is designated by  $B$  while that for blue eye is designated by  $b$ . Which of the following genotypes would produce a ratio of half blue-eyed and half brown-eyed offspring?

- A)  $Bb \times Bb$   
 B)  $BB \times Bb$   
 C)  $BB \times bb$   
 D)  $Bb \times bb$
- 41) Haemophilia is a sex-linked recessive trait in humans. What would be the possible phenotypes of the parents of a haemophiliac son and a normal daughter?

	Father	Mother
A)	Carrier	Normal
B)	Haemophiliac	Carrier
C)	Carrier	Haemophiliac
D)	Normal	Carrier

- 42) The infective stage of the malaria parasite is the  
 A) Sporozoite  
 B) Trophozoite  
 C) Merozoite  
 D) Gametocyte
- 43) In a garden ecosystem, hawks feed on small birds which in turn feed on garden snails. The garden snails feed on the leaves of groundnut plants. Identify a suitable food chain for this ecosystem  
 A) Hawks  $\rightarrow$  small birds  $\rightarrow$  garden snails  $\rightarrow$  groundnut plant leaves  
 B) Garden snails  $\rightarrow$  groundnut plant leaves  $\rightarrow$  small birds  $\rightarrow$  hawks  
 C) Groundnut plant leaves  $\rightarrow$  garden snails  $\rightarrow$  small birds  $\rightarrow$  hawks  
 D) Groundnut plant leaves  $\rightarrow$  small birds  $\rightarrow$  garden snails  $\rightarrow$  hawks
- 44) Which of these diseases is caused by a fungus?  
 A) Athlete's foot  
 B) Chlamydia  
 C) Tetanus  
 D) Severe acute respiratory syndrome (SARS)

- 45) The correct order for the stages in the primary treatment of sewage at a sewage works is
- A) Grit settlement, screening, sedimentation and sludge digestion
  - B) Screening, grit settlement, sedimentation and sludge digestion
  - C) Screening, sedimentation, sludge digestion and grit settlement
  - D) Sedimentation, screening, grit settlement and sludge digestion
- 46) A long-term effect of excessive alcohol consumption to the human body is
- A) Delirium tremens
  - B) Hallucination
  - C) Liver cirrhosis
  - D) Lung cancer
- 47) Two natural fibres that can be used to make clothing are
- A) Linen and polyester
  - B) Silk and terylene
  - C) Wool and nylon
  - D) Cotton and linen
- 48) Which of the following is a rule of good hygiene?
- A) Keeping our hairs very long and washing them once a week
  - B) Brushing our teeth only when going to bed
  - C) Keeping our body parts always clean
  - D) Keeping long and clean fingernails and toenails
- 49) Identify a first Aid measure that can be administered to a victim of a nose bleed
- A) Instructing him to move around with the head lifted upwards
  - B) Instructing him to lie down with the head tilted on one side
  - C) Instructing him to blow his or her nostrils immediately
  - D) Instructing him to sit down and bend the head slightly forward
- 50) In a hospital the specialist doctor that treats diseases affecting children is called
- A) Paediatrician
  - B) Obstetrician
  - C) Gynaecologist
  - D) Psychiatrist

**THE END**