

**YEAR: 11**

**SUBJECT: ATAR HUMAN BIOLOGY UNITS 1 AND 2**

**TEST: Foetal Development, Diagnosis of Foetal Health, Birth, Post Pregnancy Changes and Lactation.**

**TIME: 60 minutes**

**QUESTIONS: 20 Multiple Choice (20 marks)**

**8 Short Answers (30 marks)**

**1 Extended Answer (10 marks)**

**TOTAL MARKS: 60 marks**

**DO NOT WRITE ON OR MARK THIS PAPER**

**MULTIPLE CHOICE SECTION [20 MARKS]**

**Questions 1-20**

1. The ductus venosus diverts foetal blood away from the
   1. lungs
   2. liver
   3. placenta
   4. left ventricle
2. The foramen ovale:
   1. diverts blood from the right atrium to the left atrium
   2. allows blood to flow more freely to the foetal lungs
   3. diverts blood from the left atrium to the right atrium
   4. allows deoxygenated blood in the right atrium to mix with oxygenated blood in the left atrium
3. During parturition, the cervix will be fully dilated by the:
   1. end of the first stage of labour
   2. middle of the second stage of labour
   3. end of the third stage of labour
   4. middle of the first stage of labour
4. The third stage of labour involves the birth of the:
   1. foetus
   2. placenta
   3. placenta and membranes
   4. placenta, membranes and remains of the umbilical cord.

5. A developing foetus has a hole in the heart to allow deoxygenated and oxygenated blood to mix. It is known as the foramen ovale and should close over after birth. With reference to the diagram below, when present, the foramen ovale connects:



a. 9 and 10

b. 4 and 5

c. 1 and 2

d. 2 and 9





**TEST: Birth, Contraception, STIs and Genetics**

**ANSWER BOOKLET**

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Multiple Choice Short Answer Extended Answer Total

**/ 10**

**/ 60**

**/ 30**

**/20**

**SECTION ONE:** Multiple choice answers

Cross (X) through the correct answer.

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| **1** | a | b | c | d |  | **11** | a | b | c | d |
| **2** | a | b | c | d |  | **12** | a | b | c | d |
| **3** | a | b | c | d |  | **13** | a | b | c | d |
| **4** | a | b | c | d |  | **14** | a | b | c | d |
| **5** | a | b | c | d |  | **15** | a | b | c | d |
| **6** | a | b | c | d |  | **16** | a | b | c | d |
| **7** | a | b | c | d |  | **17** | a | b | c | d |
| **8** | a | b | c | d |  | **18** | a | b | c | d |
| **9** | a | b | c | d |  | **19** | a | b | c | d |
| **10** | a | b | c | d |  | **20** | a | b | c | d |

**SHORT ANSWER SECTION [30 MARKS]**

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**Question 21**

Explain how the cervix becomes dilated for preparation of childbirth (3 marks)

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**Question 22**

Briefly explain two physical changes to a mother after childbirth (2 marks)

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**Question 23**

What is an IUD (intrauterine device) and how are current market IUDs used to prevent pregnancy? (You only need to discuss one IUD currently on the market) (3 marks)

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**Question 24**

Using a contraceptive method as an example, explain how hormonal contraceptives can prevent pregnancy. (3 marks)

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**Question 25**

a) Explain why it is possible to treat syphilis and gonorrhea with antibiotics, but HIV infection does not respond to antibiotic treatment. (2 marks)

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b). Explain how chlamydial infection can lead to infertility in women. (2 marks)

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c.) Explain why chlamydia was once mistaken to be a virus and not a bacterium.

(2 marks)

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**Question 26**

Sickle-cell anaemia is a genetic disease in which the homozygote ss causes the red blood cells to become sickle shaped and lose their oxygen carrying capacity. In the heterozygote Ss, both types of red blood cells are formed, i.e. both normal and sickling. The person is said to have sickle-cell trait (not anaemia). People who have Ss are quite healthy but they can suffer a shortage of oxygen at high altitudes or under extreme physical exertion. A person who is homozygote SS is normal.

1. What is this disease’s mode of inheritance? (1 mark)

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1. If a couple who both have the sickle-cell trait have children, what is the probability that their first child will have sickle cell trait? (3 marks)

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1. If a person who has sickle-cell trait marries a normal homozygote, what is the probability that any of their children will have sickle-cell anaemia? (3 marks)

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**Question 27**

Red-green colour blindness is an X-linked recessive condition. Victoria has normal vision as do her parents, Joshua and Jayde, but Victoria’s brother Craig has colour blindness.

What are the genotypes of Victoria, her parents Joshua and Jayde, and her brother Craig? (Use the appropriate symbols to represent the alleles). (2 marks)

a) Victoria \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) Joshua \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) Jayde \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) Craig \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question 28**

The ABO blood grouping system displays two phenomena in genetics. It is inherited by multi-allelic and co-dominant inheritance. Explain the following terms and give an example using the ABO system.

1. Multiple Alleles (2 marks)

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1. Co-dominance (2 marks)

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**EXTENDED ANSWER SECTION [10 MARKS]**

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You must answer **either** question 29 or question 30

(Do not answer both questions, as only your first answer will be marked. Do not answer parts of questions from both questions, as only your first answer will be marked)

**Question 29**

a) Using five examples outline the way HIV may be spread from person to person. (5 Marks)

b) Outline the stages of an infection with human immunodeficiency virus (HIV) that eventually develops into AIDS. (5 Marks)

OR

**Question 30**

1. Using a diagram, describe the events that occur to enable milk to be released from the nipples. (7 marks)
2. Explain, using scientific terminology, why the first milk secretions are very important for a newborn child (3 marks)

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**END OF TEST**