16. Reproduction

16.4 Sexual reproduction in humans

Paper 1 and 2

Question Paper

Paper 1

Questions are applicable for both core and extended candidates

1 In humans, why are sperm cells produced in much greater numbers than egg cells?

A Many sperm cells are needed to fertilise an egg cell.

B Sperm cells are small in size.

C Sperm cells are non-motile.

D The chance of one sperm cell reaching an egg is very small.

2 What is the ball of cells that implants into the lining of the uterus during sexual reproduction in humans?

A embryo

B gamete

C placenta

D zygote

3 What is a flagellum?

A a ball of cells that implants into the lining of the uterus

B a cell structure that releases energy

C a cell that forms after the sperm cell fuses with the egg cell

D an adaptive feature used for movement of sperm cells

4 Which word describes a fertilised cell?

A acrosome

B embryo

C gamete

D zygote

5 Which part of the female reproductive system releases egg cells?

A cervix

B ovary

C oviduct

D uterus

6 Which adaptive feature of sperm provides the energy that enables it to swim?

A the acrosome

B the cell membrane

C the flagellum

D the mitochondria

7 What is the function of the acrosome in a sperm cell?

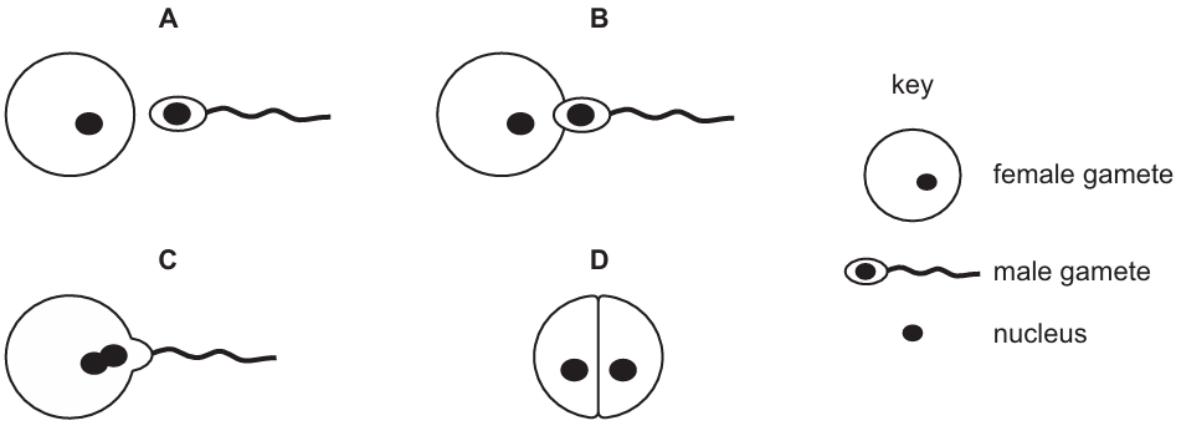
A The acrosome contains enzymes that digest the jelly coat of an egg cell.

B The acrosome is needed for the sperm cell to move.

C The acrosome releases energy.

D The acrosome stores genetic information.

8 Which diagram shows fertilisation?

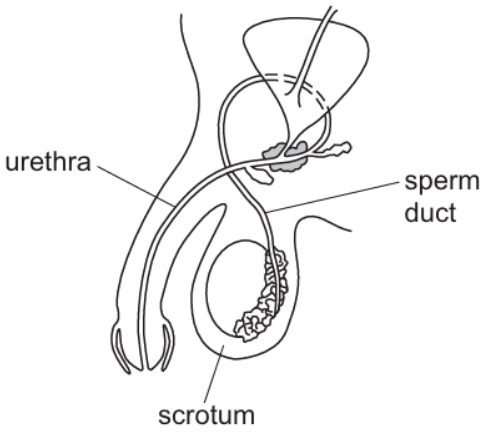


9 The diagram shows a human sperm cell.

Which structure digests the egg cell membrane?

10 Which diagram of the male reproductive system is correctly labelled?

A



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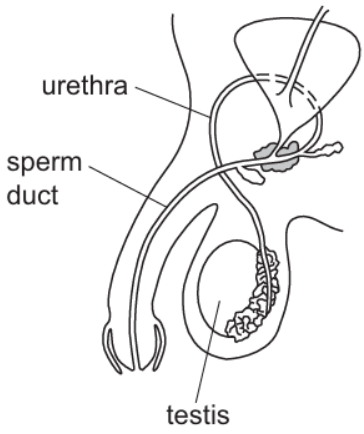

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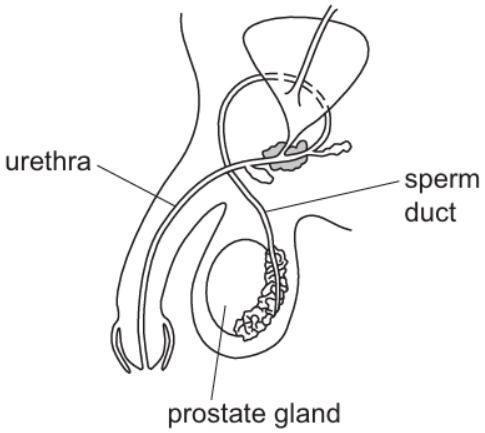

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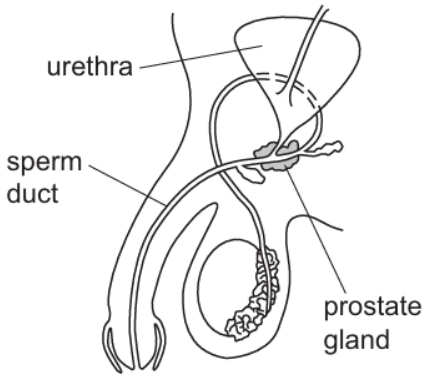
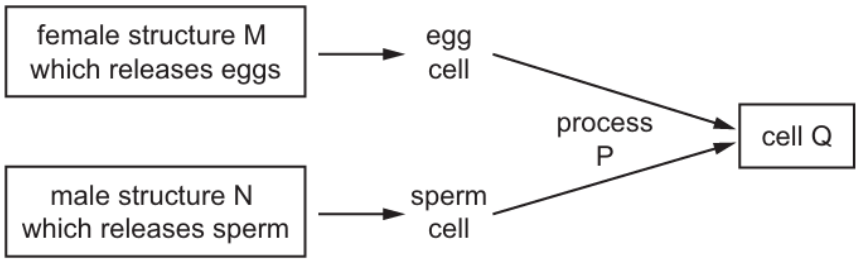


11 The diagram shows some stages in reproduction.



Which letter correctly identifies the structure or process?

A M is the oviduct.

B N is the sperm duct.

C P is fertilisation.

D Q is the gamete.

12 In a sperm cell, which structure contains enzymes that can digest the jelly coat of an egg cell?

A acrosome

B flagellum

C mitochondria

D nucleus

13 What is the name of the ball of cells that forms soon after fertilisation in humans?

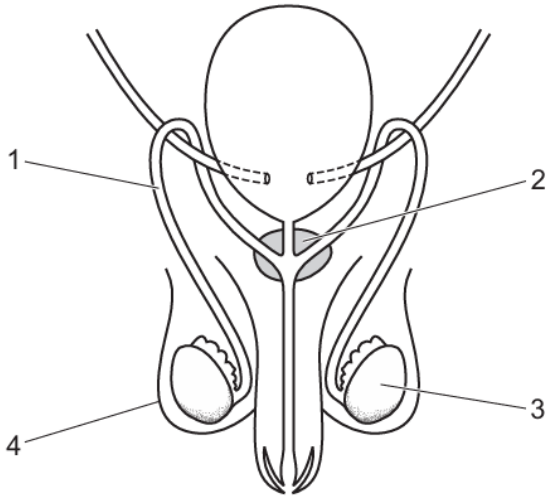
A embryo

B ovum

C placenta

D fetus

14 The diagram shows part of the male reproductive system.



Which structures manufacture sperm and the fluid the sperm are transported in?

A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

15 Which structure in the male reproductive system makes the fluid for sperm to swim in?

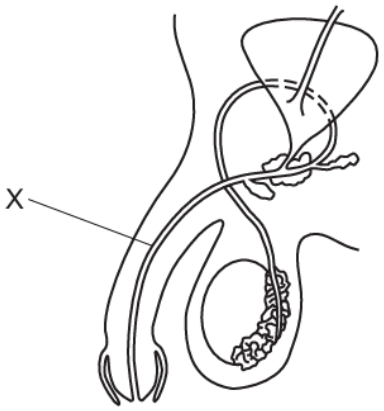
A penis

B scrotum

C prostate gland

D testis

16 The diagram shows the male human reproductive system.



What is X?

A bladder

B prostate gland

C sperm duct

D urethra

17 What is the sequence of events when a woman gives birth?

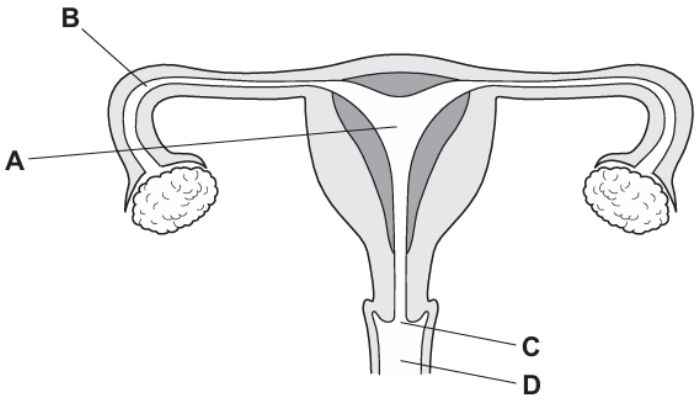
	1st	2nd	3rd
A	delivery of afterbirth	cervix dilates	passage of fetus through vagina
B	cervix dilates	passage of fetus through vagina	umbilical cord cut
C	passage of fetus through vagina	amniotic sac breaks	cervix dilates
D	umbilical cord cut	passage of fetus through vagina	delivery of afterbirth

18 During childbirth, what must happen to the amniotic sac, cervix and the uterus wall?

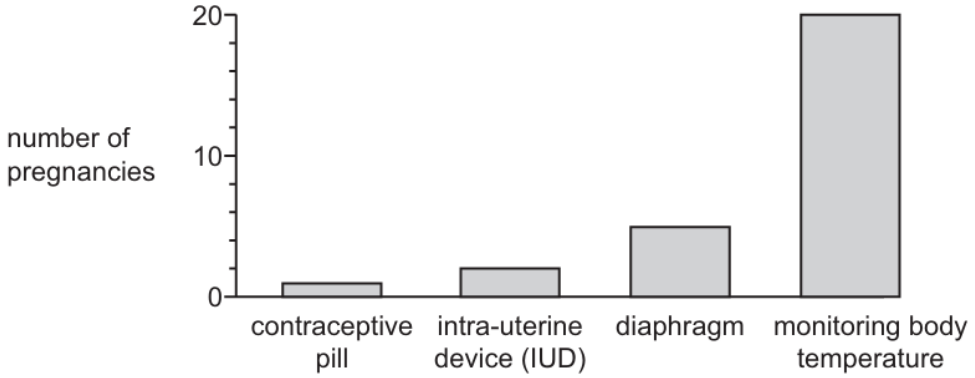
	amniotic sac	cervix	uterus wall
A	breaks	contracts	contracts
B	breaks	dilates	contracts
C	expands	contracts	relaxes
D	expands	dilates	relaxes

19 The diagram of the female reproductive system shows where different methods of birth control can be used.

Where would an IUD be placed?



20 The graph shows the number of pregnancies in 4 groups of 100 women. Each group used a different method of contraception.



The method of contraception which is the **most** effective is

A barrier.

B chemical.

C natural.

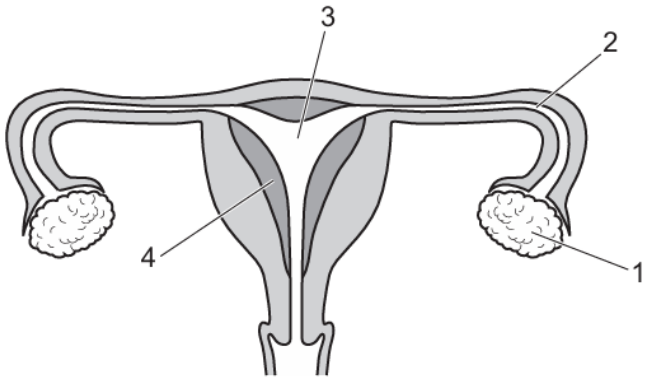
D surgical.

21 The table shows some of the stages that happen during labour and birth.

What is the correct order?

A	amniotic sac breaks	→	cutting umbilical cord	→	cervix fully dilated	→	afterbirth delivered	→	passage through vagina
B	amniotic sac breaks	→	cervix fully dilated	→	passage through vagina	→	cutting umbilical cord	→	afterbirth delivered
C	cervix fully dilated	→	amniotic sac breaks	→	cutting umbilical cord	→	passage through vagina	→	afterbirth delivered
D	afterbirth delivered	→	cervix fully dilated	→	cutting umbilical cord	→	amniotic sac breaks	→	passage through vagina

22 The diagram shows the female reproductive system.



Where does fertilisation normally occur?

A 1 and 2 **B** 2 only **C** 3 and 4 **D** 4 only

23 In humans, what is an example of a secondary sexual characteristic in **both** males and females?

A hair grows on face

B hips widen

C fat is deposited on hips and thighs

D sexual organs grow

24 What is formed when the nucleus of a sperm fuses with the nucleus of an egg?

A gamete

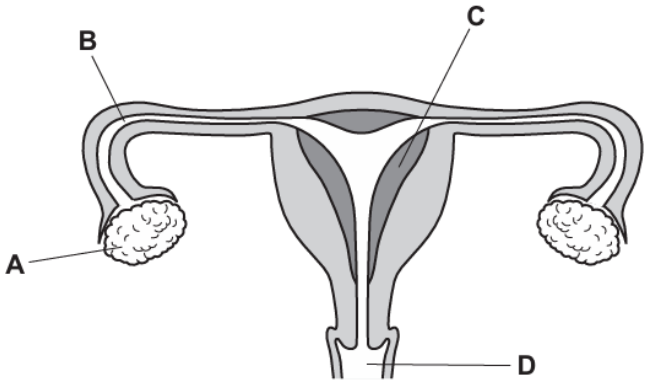
B ovule

C stamen

D zygote

25 The diagram shows the female reproductive system.

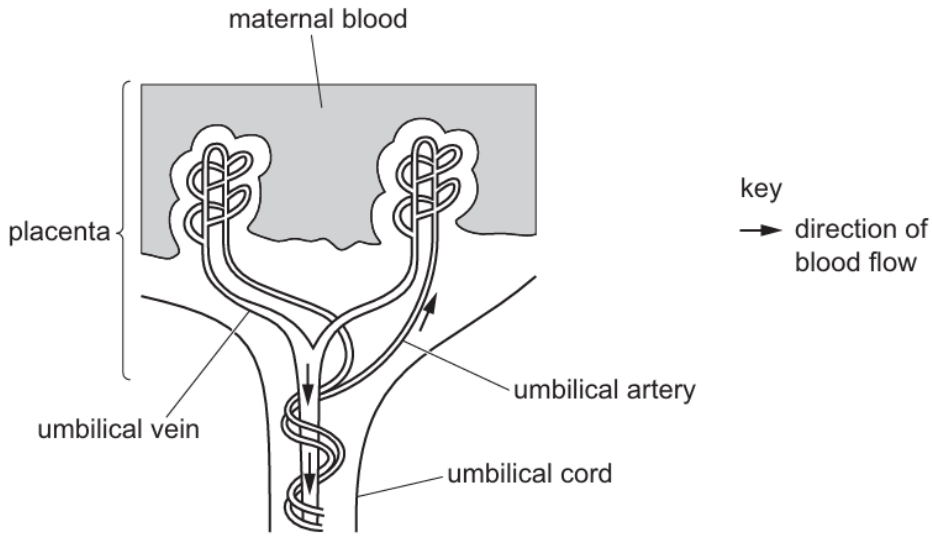
Where does implantation normally occur?



Paper 2

Questions are applicable for both core and extended candidates unless indicated in the question

26 The diagram shows part of a placenta and umbilical cord.



What is the function of the umbilical vein? **(extended only)**

A to stop pathogens passing into the fetus

B to stop toxins passing into the fetus

C to transport carbon dioxide away from the fetus

D to transport oxygen to the fetus

27 In a sperm cell, which structure contains enzymes that can digest the jelly coat of an egg cell?

A acrosome

B flagellum

C mitochondria

D nucleus

28 Which adaptive feature is only found in female gametes?

A acrosome containing enzymes

B flagellum

C jelly coat

D nucleus containing chromosomes

29 How will the composition of a pregnant woman's blood change as it passes through the placenta?

(extended only)

	concentration of dissolved oxygen	concentration of urea
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

30 Modern agricultural methods often use artificial insemination (AI) to breed dairy cattle.

Which statement describes the process of artificial insemination?

A Sperm is collected from a bull and frozen. The sperm is later inserted into the vagina of a cow.

B Eggs are removed from a cow and fertilised using sperm from a bull. The fertilised eggs are reinserted into the uterus of the cow.

C Male and female cows with desired characteristics are chosen to mate.

D Embryos are removed from the uterus of the cow. The embryos are frozen and stored for future use.

31 Which feature is only found in the male gamete?

A acrosome

B enzymes

C jelly coat

D mitochondria

32 The diagram shows a sperm cell.

Which part contains enzymes that digest the jelly coat of an egg cell?

33 In a comparison between the processes of artificial insemination (AI) and in vitro fertilisation (IVF), which statement applies to IVF only?

A Human egg cells are harvested from the ovary.

B Donated sperm cells are used to fertilise the egg cells.

C Childless couples are given the opportunity to have a child of their own.

D Fertilisation occurs inside the body of the female.

34 Which feature allows the sperm to dissolve the jelly coating of the egg cell?

A acrosome

B flagellum

C mitochondria

D nucleus

35 In humans, why are sperm cells produced in much greater numbers than egg cells?

A Many sperm cells are needed to fertilise an egg cell.

B Sperm cells are small in size.

C Sperm cells are non-motile.

D The chance of one sperm cell reaching an egg is very small.