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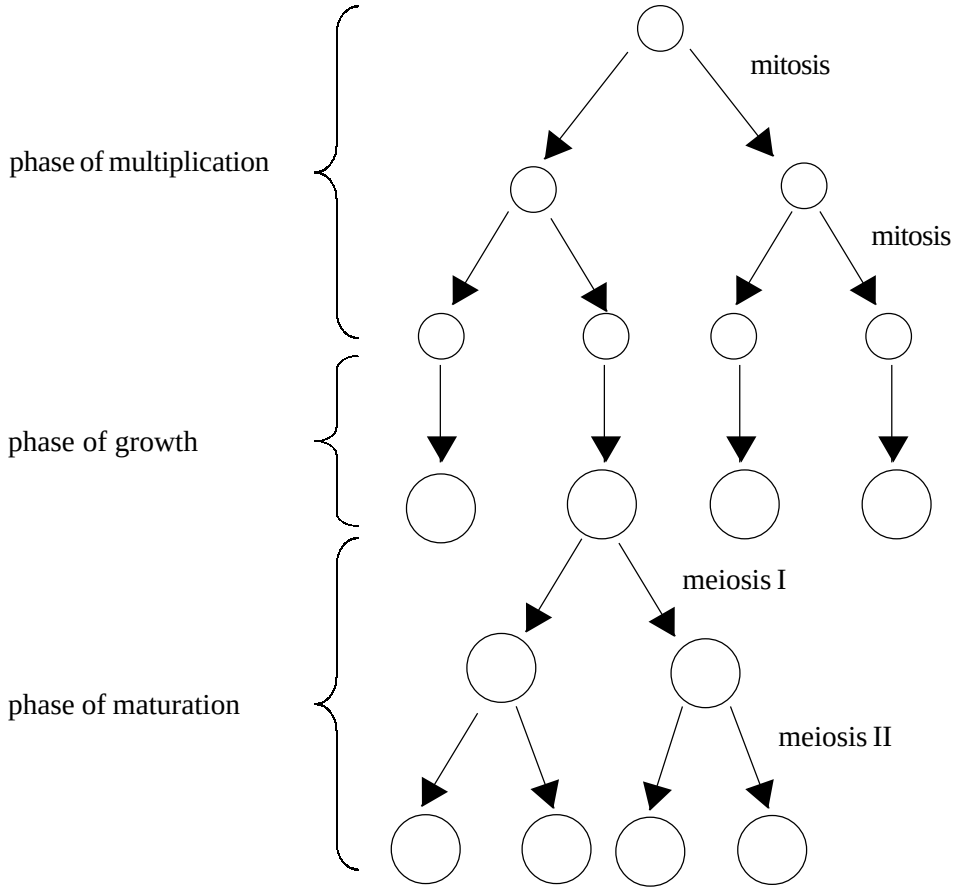
QUESTIONSHEET 1

The diagram shows the stages of gametogenesis in a mammal.



(a) List four differences between the processes of spermatogenesis and oögenesis in humans.

1 .....

2 .....

3 .....

4 .....

[4]

(b) With reference to both sexes distinguish between primary and secondary sexual characteristics in humans.

.....

.....

.....

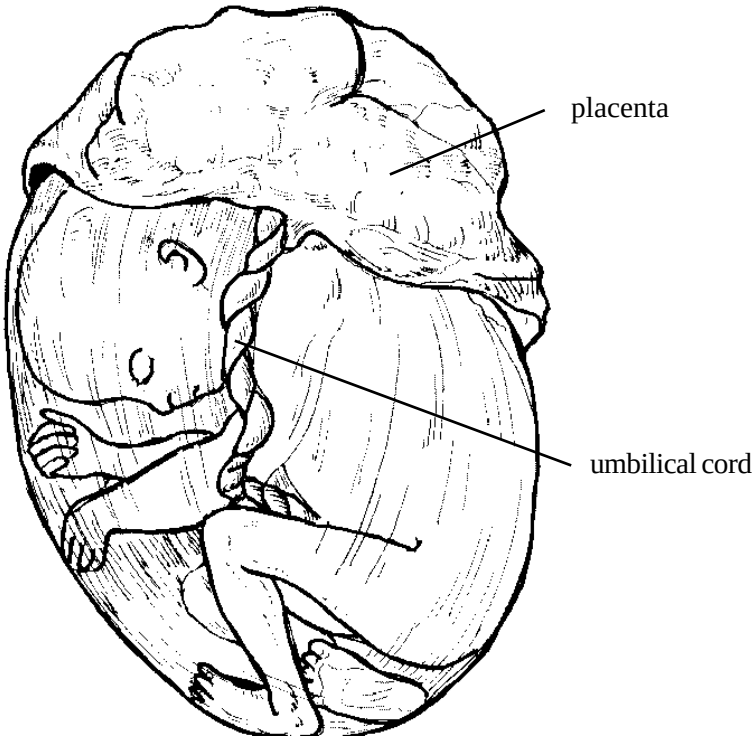
.....

[4]

(*Continued...*)

Do not write in margin

The drawing below shows a human fetus surrounded by the fetal membranes.



(c) The umbilical cord contains the umbilical vein and arteries. List four differences between the blood in the umbilical vein and the blood in the umbilical arteries.

.....

.....

.....

.....

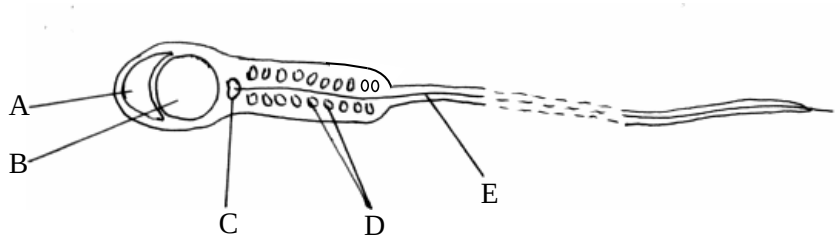
[4]

TOTAL / 12 _____

Do not write in margin

QUESTIONSHEET 2

The diagram below shows a mature spermatozoan of a mammal.



(a) (i) Name the parts A to E.

A: ..... B: ..... C: .....

D: ..... E: ..... [5]

(ii) What contributions do parts A, B and D make to the process of fertilisation?

A: .....

B: .....

D: .....

[3]

(b) (i) Distinguish between internal fertilisation and external fertilisation.

.....

.....

.....

[2]

(ii) Name two different types of organism which have external fertilisation.

1: .....

2: .....

[2]

(iii) Why is water essential for fertilisation in mammals?

.....

[1]

(iv) How is water provided for fertilisation in mammals?

.....

.....

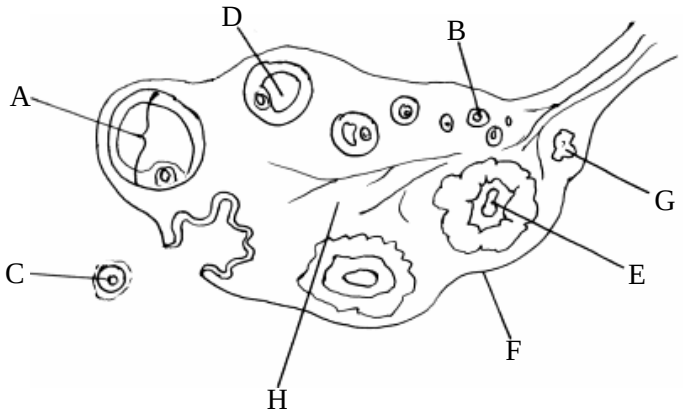
[2]

TOTAL / 15

Do not write in margin

QUESTIONSHEET 3

The diagram below shows a section of a human ovary containing structures that may appear during a menstrual cycle.



(a) (i) Name structures A to H.

A: ..... B: ..... C: .....

D: ..... E: ..... F: .....

G:. ..... H: ..... [8]

(ii) Which of the following illustrates the correct sequence of development of the ovarian structures? Underline the correct answer.

BDACEGF FBDACEG EGCADBF EFCGBAD ABCDEFG [1]

(b) (i) Name the hormones secreted by structures A and E.

A: .....

E: .....

[2]

(ii) State <u>two</u> functions for each of the hormones you have named.

Hormone 1: .....

.....

Hormone 2: .....

.....

[4]

TOTAL / 15 _____

QUESTIONSHEET 4

The table below summarises some of the information about reproductive hormones in the human. Complete the empty boxes.

Name of hormone	Site of secretion	Target organ	Function
Follicle stimulating hormone (FSH)		Ovary	
	Ovary		Repair of uterine lining after menstruation
Progesterone		Uterus	
Oxytocin		Uterus	
Prolactin			

[11]

TOTAL / 11

Do not write in margin

QUESTIONSHEET 5

Read through the account below of the roles played by hormones in controlling the menstrual cycle, and then fill in the spaces using the most appropriate word or words.

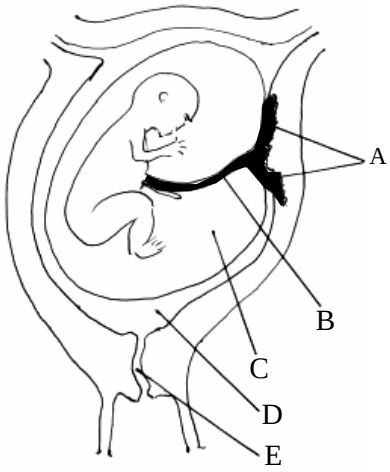
The development of an ovarian follicle in the ..... phase of the menstrual cycle is controlled by the hormones ..... and ..... both secreted by the ..... gland. As the ovarian follicle matures it releases increasing amounts of ..... which stimulates the repair of the uterine mucosa following ..... . It also starts to inhibit the secretion of ..... and promotes the secretion of ..... . This hormone has two main effects at this time, one is the stimulation of ..... and the other is the conversion of the ruptured follicle into a ..... . This structure then secretes oestrogen and ..... which promotes further development of the uterine mucosa. If ..... does not occur the secretion of this hormone ceases and a new cycle commences.

TOTAL / 12 _____

Do not write in margin

QUESTIONSHEET 6

The diagram below shows the uterus of a pregnant woman.



(a) (i) Name the structures labelled A to E.

A: ..... B: ..... C: .....

D:. ..... E: ..... [5]

(ii) Name two substances that pass from the fetal blood to mother's blood at A.

1: ..... .

2: .....

[2]

(iii) Name two substances that can pass from mother's blood to fetal blood at A.

1: .....

2: .....

[2]

(iv) Name the blood vessels passing through B and state their direction of blood flow.

.....

.....

[3]

(b) Name the fluid found in C and state two of its functions.

Name: .....

Function1: .....

Function 2: .....

[3]

TOTAL / 15 _____

QUESTIONSHEET 7

Identify the parts described in the table below by writing the correct letter in the relevant box.

Description of part		Letter
Where oxytocin is secreted	1	
Where oestrogen is produced during the menstrual cycle	2	
Dilutes fetal urine	3	
Where sperm is deposited during copulation	4	
Where testosterone is secreted	5	
Where oestrogen and progesterone are secreted in late pregnancy	6	
Where sustentacular cells of Sertoli are found	7	
Where contractions occur to expel the baby	8	
Where fertilisation occurs	9	
Where progesterone is secreted in the menstrual cycle	10	

A Amniotic fluid
B Oviduct/fallopian tube
C Placenta
D Myometrium
E Posterior pituitary body
F Testis
G Interstitial cells of Leydig
H Vagina
I Corpus luteum
J Ovarian/Graafian follicle

TOTAL / 10 _____

Do not write in margin

QUESTIONSHEET 8

(a) The table below refers to hormones involved in the menstrual cycle. If a statement is correct place a tick (✓) in the appropriate box and if it is incorrect place a cross (✗) in the appropriate box.

Hormone	Secreted by corpus luteum	Secreted by anterior pituitary	Reaches greatest concentration in blood before ovulation
Oestrogen			
Luteinising hormone (LH)			
Progesterone			
Follicle stimulating hormone (FSH)			

[4]

(b) Distinguish between each of the following pairs:

(i) gonadotropin releasing factor and gonadotropin.

.....

.....

.....

.....

[3]

(ii) prolactin and oxytocin.

.....

.....

.....

.....

[3]

(iii) chorionic gonadotropin and human placental lactogen.

.....

.....

.....

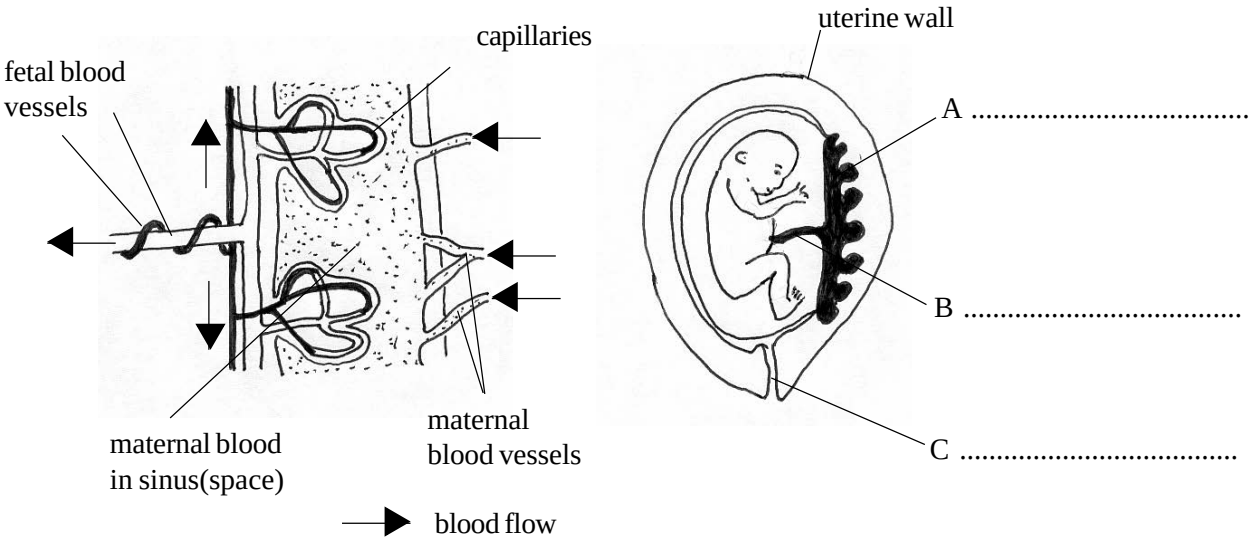
.....

[3]

TOTAL / 13

QUESTIONSHEET 9

The drawings below show a baby in the uterus and a diagrammatic view of the arrangement of the placental blood vessels.



(a) (i) Label structures A, B and C on the drawing. [3]

(ii) Name three hormones secreted by the placenta during pregnancy and state one function of each in pregnancy.

1. name: .....

   function: .....

2. name: .....

   function: .....

3. name: .....

   function: .....

[6]

(b) The placenta is also responsible for the rapid transfer of metabolites between mother and fetus and vica versa.

(i) State two features of the placenta, which can be seen in the diagram, which enable it to exchange metabolites efficiently.

1 .....

.....

2 .....

..... [2]

(ii) State a difference between maternal blood and fetal blood which enhances the transfer of oxygen across the placenta.

.....

[1]

(*Continued....*)

Do not write in margin

(c) The placenta does not provide an effective barrier against some harmful substances crossing from mother to fetus. Some of these may act as teratogens by causing fetal deformities.

(i) Give an example of a substance or agent that acts as a teratogen.

.....

[1]

(ii) Alcohol may cross the placenta. State two effects that it may have on the fetus.

.....

.....

.....

[2]

(iii) Name two other harmful substances that can cross the placenta to the fetus.

1 ..... 2 ..... [2]

TOTAL / 17

QUESTIONSHEET 10

(a) The table below describes the changes in hormone secretion from the pituitary gland during pregnancy. Complete the table by describing the effect of these changes.

Level of secretion	Effect
Increased prolactin	
Decreased FSH	
Decreased LH	

[3]

(b) Suggest explanations for the following changes in maternal metabolism which occur during pregnancy:

(i) Increased ventilation rate.

.....

.....

.....

[2]

(ii) Suppression of cell-mediated immunity.

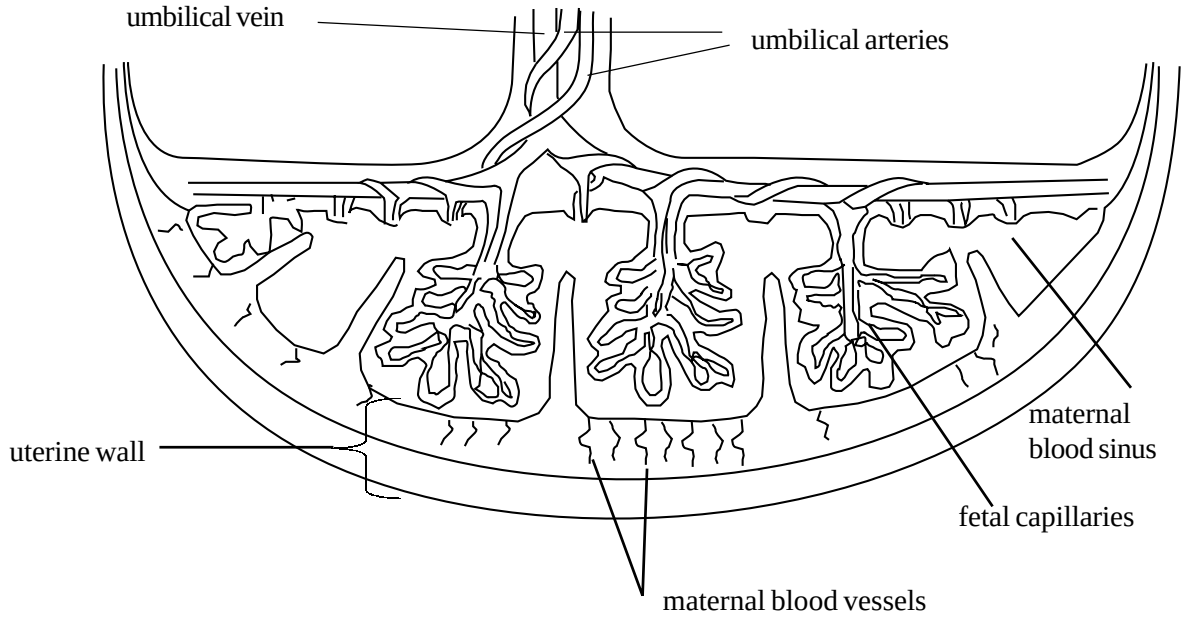
.....

[1]

TOTAL /6

QUESTIONSHEET 11

The diagram below shows the structure of the placenta and uterine wall.



(a) State the functions of the placenta.

.....

.....

.....

[3]

(b) State two functions of the umbilical vein.

1 .....

2 .....

[2]

(c) How is the placenta adapted for its functions?

.....

.....

.....

.....

[4]

(d) What are the functions of the corpus luteum in pregnancy?

.....

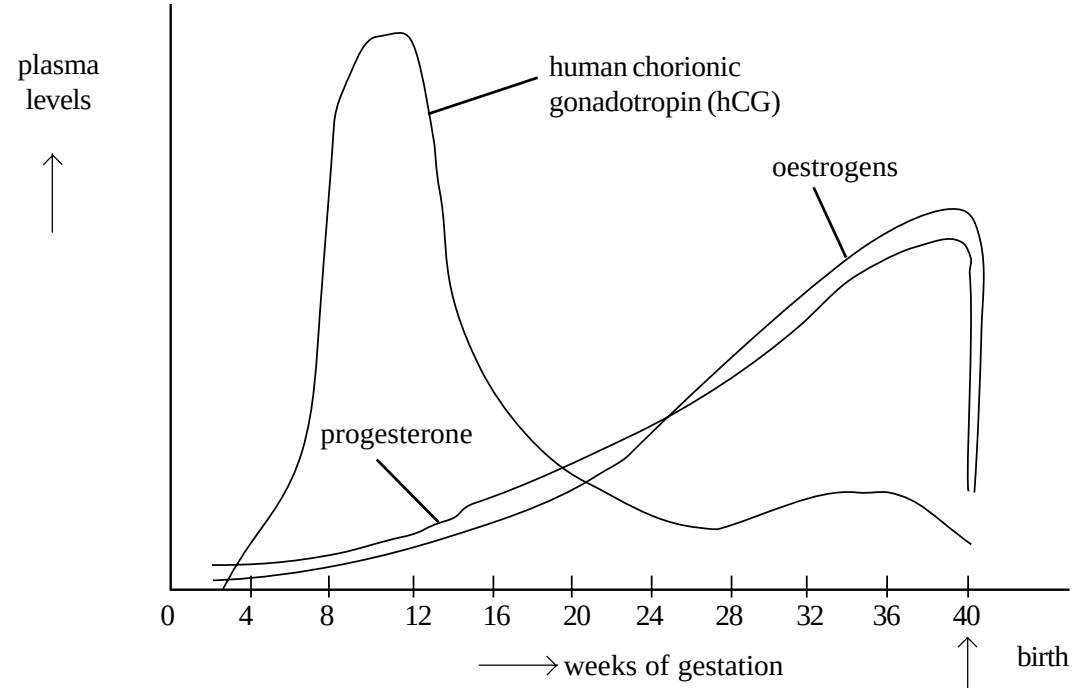
.....

[2]

TOTAL / 11

QUESTIONSHEET 12

The graph shows plasma levels of some reproductive hormones during pregnancy.



(a) (i) Explain why the presence of hCG in maternal urine can be used as a diagnostic test of pregnancy.

.....

.....

[2]

(ii) Suggest why plasma levels of hCG fall after week 12.

.....

.....

[2]

(b) (i) What are the sources of progesterone in the plasma over the gestation period shown?

.....

.....

[2]

(ii) State two functions of progesterone over the period shown.

1 .....

2 .....

[2]

(c) State two functions of oestrogens over the period shown.

1 ..... [1]

2 ..... [1]

TOTAL / 10