11 HUMAN BIOLOGY REPRODUCTION TEST

/70

Name: Answer key Teacher:_____ Date: _____

1) The milk let-down reflex is due to the action of which hormone?

a) *prolactin* ↑ production not let down.
b) *oxytocin*
c) *prostaglandins*
d) *oestrogen*

2) Which sequence of development is the most likely for humans?

a) *grasps and shakes objects; eats unaided; picks up objects between thumb and forefinger.*
b) *grasps and shakes objects; picks up objects between thumb and forefinger; walks.*
c) *eats unaided; grasps and shakes objects; picks up objects between thumb and forefinger; walks*
d) *eats unaided; grasps and shakes objects; picks up objects between thumb and forefinger.*

3) Menarche is the

a) *end of the fertile period in women*
b) *onset of puberty in girls*
c) *onset of menstruation in girls*
d) *rapid growth at puberty*

4) Which of the following hormones causes development of secondary sexual characteristics in males?

a) *follicle stimulating hormone*
b) *oestrogen*
c) *testosterone*
d) *Luteinizing hormone*

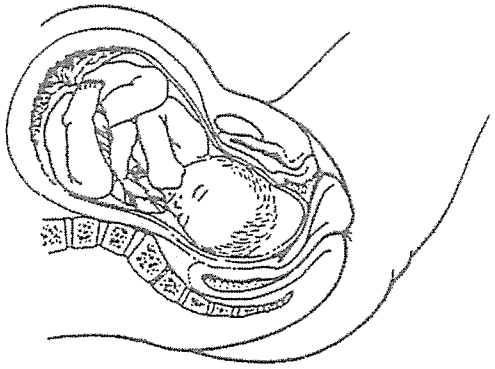
5) The normal child will begin to walk at

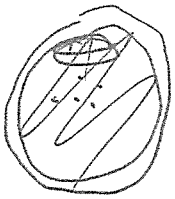
a) *2 years*
b) *15 months*
c) *3 months*
d) *2 ½ years*

6) Which statement is true?

a) *Where the umbiblical cord attaches to the chorion, the placenta develops*
b) *The upper most layer of the embryo is the endoderm*
c) *The embryonic disc separates the chorion cavity and the yolk sac*
d) *The ectoderm will develop into the gut, trachea, lungs and liver.*

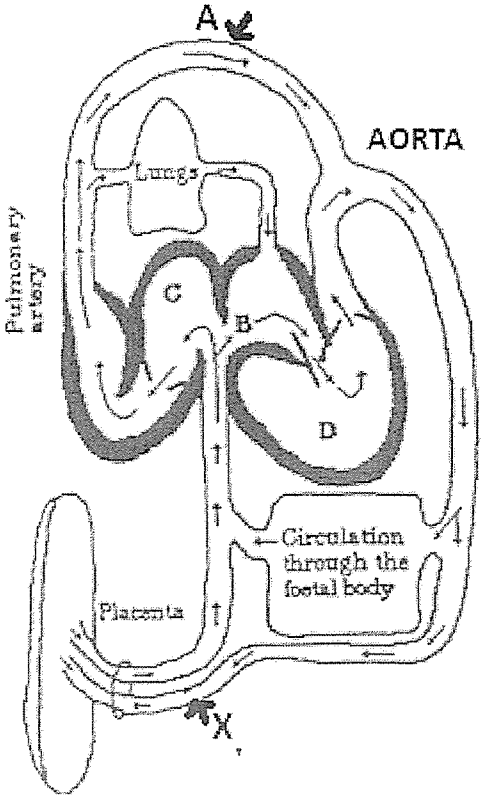
7) The diagram below shows the cervix almost completely ~~opened~~ dilated and the amnion is bulging in the front of the head this is:





a) *early in the first stage of labour*
b) *early in the second stage of labour*
c) *late in the first stage of labour*
d) *late in the second stage of labour*

8) Consider the diagram on the right.



Label A and X represent:

a) *ductus arteriosus and umbilical artery*
b) *umbilical cord and umbilical artery*
c) *umbilical cord and umbilical vein*
d) *inferior vena cava and umbilical vein*

9) Which of the following substances are received by the pregnant mother from the foetus?

a) *Urea and Carbon dioxide*
b) *Carbon dioxide and glucose*
c) *Urea and amino acids*
d) *Amino acids and glucose*

10) At what stage should a baby be able to crawl to another person?

a) *1 – 3 months*
b) *4 – 5 months*
c) *6 – 9 months*
d) *10-12 months*

11) The ovarian follicle secretes the hormone:

becomes corpus luteum which produces mainly progesterone.

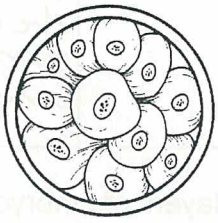
a) *oestrogen*
b) *follicle stimulating hormone*
c) *progesterone* — predominantly progesterone
d) *luteinizing hormone*

12) Which of the following pairs of sexually transmitted diseases are caused by viruses and are therefore difficult to treat?

a) *Herpes and syphilis*
b) *Acquired immune deficiency syndrome and herpes*
c) *Syphilis and gonorrhoea*
d) *Acquired immune deficiency syndrome and gonorrhea*

13) The stage of development illustrated on the right is called:

a) *morula*
b) *zygote*
c) *embryo*
d) *blastula*



SHORT ANSWERS

1. What secondary sexual characteristics would a physically mature adolescent present? List three for males and three for females. (6 marks)

Female	Male
- increased size of uterus, vulva - development of mammary glands - deposition of fat - growth of pubic hair - hair generally darker, heavier - widening of pelvic girdle - rapid growth - increased perspiration	- enlargement of penis, scrotum, prostate gland - growth of pubic, facial & chest hair - hair generally coarser, darker, heavier - deeper voice - increased muscular development - shoulders broader - increased perspiration

2. Summarise the differences and similarities between spermatogenesis and oogenesis in the table below. (4 marks)

Similarities	Differences
one cell divides to produce 4 gametes (spermatozoa) by meiosis Oogenesis - one cell divides to produce 4 cells by meiosis	Spermatogenesis - 4 small motile cells are produced. They do not have much cytoplasm, have little stored energy. Oogenesis - only one viable cell is produced, the ovum & three polar bodies (non-viable) The ovum acquires most of the cytoplasm from the original germ cell & is very large in comparison to a spermatozoa.

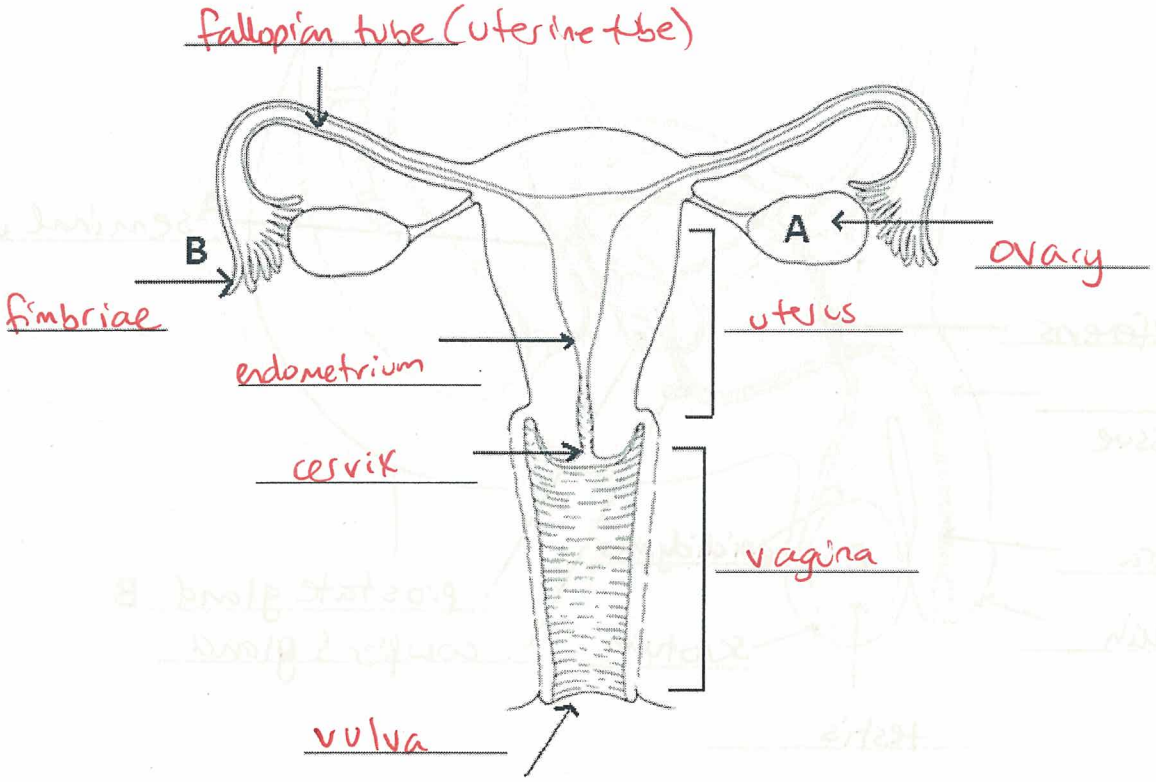
3. What are the three primary germ layers of embryonic tissue and name two features which develop from each. (6 marks)

Endoderm - alimentary canal, liver, pancreas, epithelium of urinary bladder, urethra & gall bladder. Epithelium of pharynx, auditory canal, larynx, trachea, bronchi & lungs. Epithelium of Tonsils, parathyroid & thymus glands, epithelium of vagina & associated glands.

Mesoderm - skeletal, smooth & cardiac muscles, cartilage, bone, blood, connective tissue, lymphoid tissue, epithelium of kidneys, ureters, ovaries, testes, dermis of skin.

Ectoderm - epidermis of skin, hair, nails, glands of skin, sensory organs, entire nervous system.

4. Label the diagram below. (4 marks)



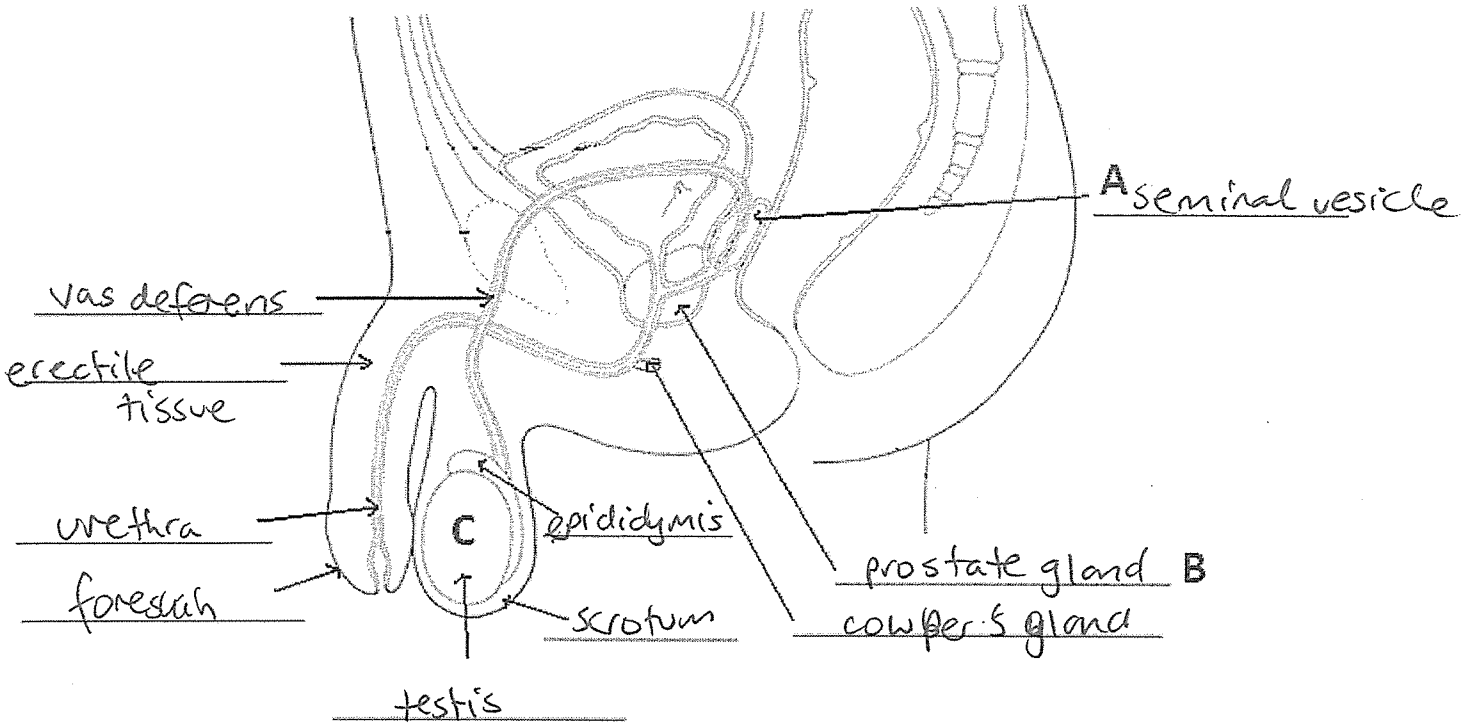
4b. What is the function of structure A. (1 mark)

to produce ova (eggs) & to produce hormones

4c. What is the function of structure B. (1 mark)

to help guide egg (ova) into fallopian tube after it is released by the ovary

5. Label the diagram below. (5 marks)



5b. What is the function of structure A. (1 mark)

secretes thick fluid rich in sugars - makes up 60% volume of semen

5c. What is the function of structure B. (1 mark)

secretes thin milky alkaline fluid - becomes part of semen

5d. What is the function of structure C. (1 mark)

produces sperm -

6. Answer the following questions using the table.

	Time Weeks	Developmental stages
FIRST TRIMESTER	0	Fertilisation
	1	Embryo reaches uterus. Implantation
	2	Flat, 2-layered disc. Ectoderm and endoderm. Sac-like digestive tract, no mouth or anus. Umbilical cord forming.
	3	3 layers present – ectoderm, mesoderm, endoderm. Beginnings of skeletal/nervous systems.
	4	Simple 2-chambered heart, tail, gill pouches, limb buds. Muscular system forming, neural tube closing to form Spinal cord and brain.
	5	Mouth, eyes, webbed fingers and toes, lungs and regions of digestive canal form
	6	Cerebral hemispheres, face, ears form
	7	Eyes open, tail disappears.
	8	All major systems formed. Now called a foetus. Ossification (replacing cartilage by bone) begins. Makes small movements, not yet felt by mother.
	9	
	12	External genital organs developed
SECOND TRIMESTER	16	'Quickening' (movement) felt by mother. Heart can be heard.
	21	Heart rate 140 beats/min. Head hair appears. Skin glands produce white paste to protect delicate skin. Sleeps and wakes.
	25	Vigorous movements.
THIRD TRIMESTER	30	Testes descend. Fat deposited. Fine hair (lanugo) covers head and body.
	34	Lanugo drops away. Takes up birth position. Head down usually.
	38	Full term. Skin covered with cheese-like vernix caseosa. Uterus has moved down in pelvis. Baby's pituitary signals for birth to begin.

6a. During what stage is the embryo/foetus the most vulnerable to adverse effects? (1 mark)

First trimeste

6b. During what stage and week does the embryo's tail disappear? (1 mark)

First trimeste, week 7

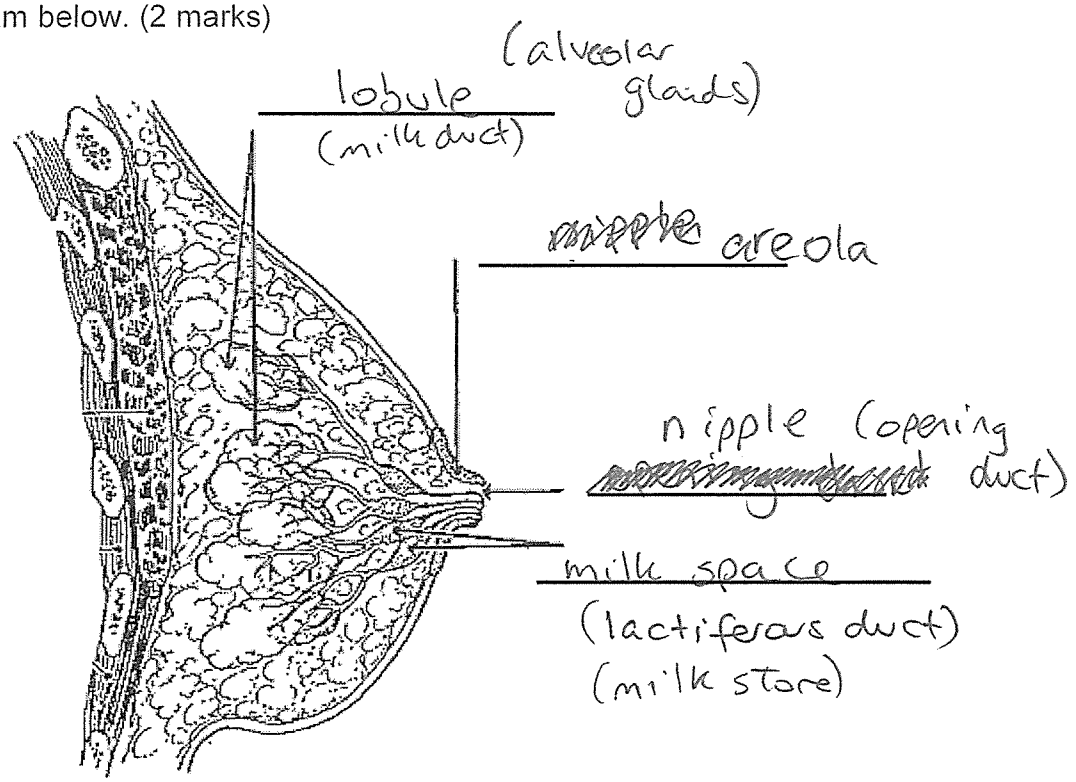
6c. During what stage/week do the fingers and toes form? (1 mark)

First trimeste week 5

7. Explain three reasons why breast-feeding is good for the baby and mother. (3 marks)

- milk is sterile
- balance of minerals
- antibacterial
- creates bond between mum & bub

8. Label the diagram below. (2 marks)



9. The table below shows methods of birth control, fill in the advantages and disadvantages. (8 marks)

Method of birth control	Advantages	Disadvantages
Condom	Easy to buy relatively cheap good protection against HIV and other STIs	May affect spontaneity, partners need to be motivated & cooperative
Combined pill	very reliable, regular periods reduced incidence of ovarian and uterine cancer: unrelated to sexual activity	regular doctors prescription required, pill must be taken daily possible side effects no protection against STIs
Vasectomy	permanet nearly 100% effective	cannot be easily reversed require a surgical procedure, specialist referred necessary sterilisation
Natural Family Planning Methods	no side effects, no costs. acceptable to certain religious groups	poor reliability

10. Choose **ONE** of the following sexually transmitted infections and describe its cause, symptoms and treatment. (3 marks)

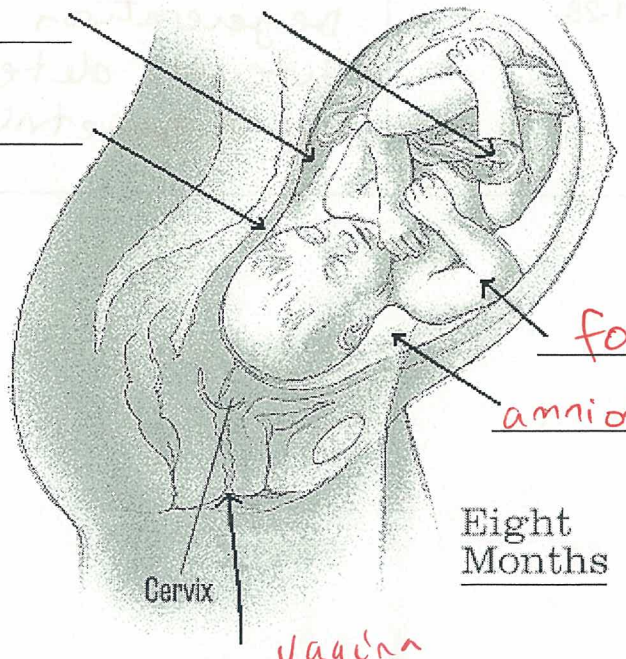
Syphilis

Gonorrhoea

Chlamydia

	Syphilis	Gonorrhoea	Chlamydia
cause	bacterium treponema pallidum	- bacteria neisseria gonorrhoeae	- bacterium chlamydia trachomatis
symptoms	- sore/ulcer on genital area, anus or mouth - flat red skin rash on soles of feet or palms of hands - swollen lymph nodes - hair loss - flu-like illness	- unusual discharge from vagina - pain while urinating - can lead to infertility in women - white/yellow pus discharge from penis - smelling of testicles	- men, discharge from penis, discomfort when urinating, swollen & sore testes. - female - vaginal discharge, pain during sex, lower abdominal pain, burning when peeing.
treatment	- antibiotics	- antibiotics	- antibiotics

11. Label the diagram below. (3 marks)



umbilical cord

placenta

wall of uterus

foetus

amniotic fluid

vagina

(or vulva)

12. The table below shows the major stages of the menstrual cycle, fill in the events for each stage. (5 marks)

Stage	Time span (days)	Major Event (in detail)
Menstruation	1-4	- uterine bleeding, accompanied by shedding of the endometrium
Preovulation	5-12	endometrial repair begins; development of ovarian follicle; uterine lining gradually thickens
Ovulation	13-15	rupture of mature follicle, releasing egg
Secretion	16-20	secretion of watery mucus by glands of endometrium, cervix and uterine tubes; movement & breakdown of unfertilized egg, development of corpus luteum
Premenstruation	21-28	Degeneration of corpus luteum, deterioration of endometrium