BIOLOGY 1 1997 - NECTA FORM FOUR

Solutions from: Maktaba by TETEA

By Yohana Lazaro

1

i	ii	iii	iv	v	vi	vii	viii	ix	x
C	A	D	D	A	D	C	C	B	C

i	ii	iii	iv	v	vi	vii	viii	ix	x
J	L	M	P	Q	S	C	B	F	H

3.(a)(i)-vibrio cholerae, cholera

-salmonera tetani, tetenus

(ii)-through contaminated water

-through using dirty sharp tools.

(b)(i)slug lives in fresh water, while starfish lives in salty water.

(ii)conifers bare cones while mango tree does not.

4. (a)(i) chlorophyll, whose function is to help photosynthesis.

(ii) haemoglobin, whose function is to transfer oxygen within body.

(iii) aqueous humour that prevents the total internal reflection of light in the eye.

(b)receptor, sensory nerves, intermediate nerves,motor nerves, effector.

5. (a) execration

(b)(i)green

(ii)green and yellow

(c)to enable formation of carbon dioxide gas

(d)carbon dioxide gas, tested by changing lime water milky

(e)-follow procedures effective and avoiding errors

6. (a) Artery carry oxygenated blood, while veins carry deoxygenated blood.

(b) oestrus cycle is the time from point of ovum production up to its maturity while menstrual cycle is the period from point of ovulation to point of removing unfertilized egg.

7. (a)(i)A contracted, B relaxed

(ii) C relaxed, D contracted

(b)-joint x is ball and socket joint

-joint y is hinge joint

(c) E is ligament, F is tendons

8. (a)renal artery supplies oxygen to the kidney, while renal vein takes away carbon dioxide from the kidney.

-male urethra can carry sperms to a woman, while female urethra not.

(b)(i) inhaled air is oxygen while exhaled air is carbon dioxide.

(ii)red blood cells carry oxygen while white blood cell fight against pathogens

(iii)maiz frain has one cotyledon while bean seed has two cotyledons.

9. (b)germination of figure 5 is hyogeal germination while that of figure 6 is epigeal germination

(c)(i)-oxygen

-moisture

-temperature.

(ii)-oxygen helps in respiration to provide energy for germination.

-moisture helps to dissolve the stored food material s in solution form.

-temperature helps in favouring good environment for enzymes to work properly.

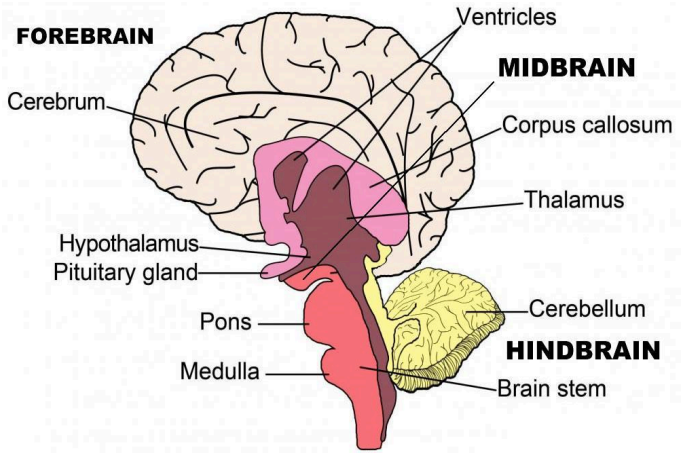
10.(a)causes of variations in population are:-

-nutrition

-diseases

-environmental factors

(b)HUMAN BRAIN DIAGRAM



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11.BIRTH CONTROL

What is birth control?

Birth control is any activity, medicine, or equipment used to prevent pregnancy. There are many types of birth control available for women who do not wish to become pregnant. The decision on which method is right for you should be made with your healthcare provider, as well as with your partner.

Birth control methods work in different ways to prevent pregnancy, including:

Creating a barrier that blocks sperm from reaching the egg

Killing sperm

Preventing eggs from being released by the ovaries

Changing the cervical mucus to hinder sperm from moving into the uterus

Altering the tissue lining the uterus so that a fertilized egg can't implant

What are the different types of birth control?

Some methods that don't require a prescription from your healthcare provider include:

Abstinence. Not having sex.

Spermicides. Foams or creams placed inside the vagina to kill sperm. These may also provide some protection against sexually transmitted infections. This is especially possible when used with a latex condom.

Male condom. A thin tube made of latex or a natural material that is placed over the penis. The sperm is collected in the end of the condom. Latex condoms may provide some protection against sexually transmitted infections.

Female condom. A liner made of latex or natural material that is placed inside the vagina. Latex condoms may provide some protection against sexually transmitted infections.

Natural family planning. Timing sex to avoid fertile days using various methods of monitoring body temperature. It also involves watching for changes in cervical mucus, and the use of ovulation prediction kits. This method, often known as the rhythm method, has a high risk for pregnancy.

Some methods that require a visit to your healthcare provider for an exam and a prescription include:

Oral contraceptives (birth control pills). Medicines taken daily that prevent ovulation by controlling pituitary hormone secretion. Usually, oral contraceptives contain the hormones estrogen and progestin.

In addition to prevention of pregnancy, oral contraceptives have several health benefits including regulating menstrual cycles and decreasing the amount and length of menstrual periods. This can help increase iron stores in women with iron deficiency associated with excessive bleeding. Prevention of certain ovarian and endometrial cancers is a significant benefit of the use of oral contraceptives.

Mini-pill. Unlike the traditional birth control pill, the mini-pill has only the hormone, progestin. Taken daily, the mini-pill thickens cervical mucus and prevents the sperm from reaching the egg. The mini-pill also can decrease the flow of your period and protect against pelvic inflammatory disease and ovarian and endometrial cancer.

Implant. A capsule containing the synthetic hormone etonogestrel is implanted under the skin in the upper arm of a woman. This continuously prevents the ovaries from releasing an egg for up to 3 years. A local anesthetic is needed for insertion and removal of this type of birth control.

Injection. A progesterone-like drug given by injection to prevent pregnancy by stopping ovulation. The effects last for about 3 months and another injection must be given to continue birth control effectiveness.

Patch. This is a skin patch worn on the body that releases the hormones estrogen and progestin into the bloodstream. It is most effective in women who weigh less than 198 pounds.

Diaphragm or cervical cap. A dome-shaped rubber cup with a flexible rim that is inserted through the vagina to cover the cervix. This type of birth control must be inserted before having sex.

Hormonal vaginal contraceptive ring. A ring that is placed inside the vagina around the cervix. The ring releases the hormones estrogen and progestin.

Intrauterine device (IUD). Devices placed in the uterus through the cervix by a healthcare provider. The IUD works by thickening cervical mucus to make it hard for sperm to enter the cervix. Or by preventing the fertilized egg from attaching to the wall of the uterus. IUDs containing hormones are also called intrauterine systems and must be replaced every 5 years, while copper IUDs can last up to 10 years.

Surgery that results in the inability to become pregnant includes:

Hysterectomy. Removal of the uterus and usually the ovaries and fallopian tube. This is a permanent form of birth control.

Tubal ligation or tubal occlusion ("tying the tubes"). Surgery to cut, cauterize, or band the fallopian tubes to prevent the egg from being transported to the uterus. Tubal ligation is designed to be a permanent method of birth control. Although certain types of tubal ligations can be reversed, the reversal procedure may not be successful.

Tubal sterilization Essure system. This permanent form of birth control can be done as an outpatient procedure without a surgical incision. During the procedure, a thin tube is used to thread a tiny, springlike device through the vagina to the uterus into each fallopian tube. A material in the device causes scar tissue to develop and permanently plug the tubes after about 3 months. Other forms of birth control must be used during that time. An X-ray or ultrasound must be done to confirm that the tubes are blocked

Vasectomy. Cutting or clamping the vas deferens. These are the tubes that carry the sperm from the testes. The testes still produce sperm, but the sperm die and are absorbed by the body. This is a permanent male birth control measure.

The following are not reliable methods of birth control:

Withdrawal before ejaculation

Sex during menstruation

Standing up immediately after sex

Douching after sex.

12.

12; Possible genes;-

Katundu = OB.

Hazalilitci ; OA

Kaajali = OO

Then, consider the following Crossing;-

Parental phenotype; Blood group B X Blood group A.

Parental genotype; OB OA.

Meiosis;

Gametes; (O) (B) (O) (A)

Fertilization;

F_1 genotype; OO OA OB AB.

F_1 phenotype;

Conclusion, Since there is blood group O in the F_1 generation hence the son is of Katundu.

13. Skin

The skin covers almost all parts of the body to prevent infection from pathogens. If it is cut or grazed it immediately begins to heal itself, often by forming a scab, which prevents infection as the skin acts as a physical barrier. Parts of the body that do not have skin have developed other ways to prevent infection. For example, the eyes produce tears which contain enzymes. These enzymes are chemical barriers.

Respiratory system.

Nose

The nose has internal hairs, which act as a physical barrier to infection. Cells in the nose produce mucus. This traps pathogens before they can enter the lungs. When the nose is blown, mucus is removed and any pathogens are trapped within it.

Trachea and bronch.

-The trachea runs from the nose towards the lungs. The cells that line the trachea also have hairs called cilia, which are much smaller than those in the nose. These are called ciliated cells. The ciliated cells waft their hairs in a motion like a Mexican wave at a football match and move mucus and pathogens upwards towards the throat where it is swallowed into the stomach. Other cells called goblet cells create the mucus in order to trap pathogens. The production of mucus in the airways is a physical barrier.

Digestive system.

-Stomach

Stomach acid does not break down food. It is part of the body's non-specific first line of defence. Stomach acid is hydrochloric acid and, while it does us no harm, it is strong enough to kill any pathogens that have been caught in mucus in the airways or consumed in food or water. Stomach acid is a chemical barrier against infection.

-The body also defends against infection by increasing the number of certain types of white blood cells (neutrophils and monocytes), which engulf and destroy invading microorganisms. The increase can occur within several hours, largely because white blood cells are released from the bone marrow, where they are made. The number of neutrophils increases first. If an infection persists, the number of monocytes increases. The blood carries white blood cells to sites of infection.