



2024 MASEÑO SCHOOL ANNUAL NATIONAL BIOLOGY CONTEST



ANSWERS	
1.	Their inner lining have germinal epithelial cells which divide by meiosis; to give rise to sperm cells; Have sertoli cells which offers site for maturation of sperms;
2.	Broad lamina; thin cuticle; numerous stomata on both leaf epidermis;
3.	a) Protection;
	b) Made up of myofibrils which contract and relax to alter the angle between hair shaft and skin surface; to regulate the amount of air trapped hence thermoregulation; thereby protecting the body from too low temperatures below optimum and too high temperature above optimum;
4.	Accumulation of cholesterol/internal bleeding; leads to formation of a clot in the coronary artery; under severe conditions, the coronary artery gets blocked hence starving cardiac muscles of oxygen and nutrients; this impairs contraction of cardiac muscles hence cardiac arrest;
5.	The guard cells in non-green patches lacks chloroplast and consequently chlorophyll; this leads to increased stomatal closure due to minimal amount of light energy trapped; hence low rate of water loss;
6.	Skin colour; hair texture; facial structures;
7.	Mule has 63 dissimilar chromosomes; which cannot pair during meiosis; hence no gamete formation;
8.	Prevents its excretion through ultrafiltration in the kidney glomeruli; Gives the blood a 'syrupy' nature so that it can easily be pumped by the heart faster; enables them to take up and release oxygen with greatest efficiency due to chemical environment in erythrocytes;
9.	Substance Z was a co-enzyme; which activated enzyme zymase secreted by yeast cells; hence faster rate of fermentation;
10.	Allows pollen tube to enter into the ovule; allows imbibition to take place;
11.	a) Chondrodystrophic dwarfism;
	b) Occurs during metaphase I and II; the bivalents and homologous chromosomes are randomly arranged along the equator of spindle fibres; hence get ready to separate and move into different gametes;
12.	The sweat glands get stimulated to produce sweat; more water lost in sweat raises osmotic pressure of blood; this brings about thirst sensation;
13.	a) Callus tissue;
	b) Cytokinins; auxins;
14.	Unripe banana contain starch which is a non-sugar; while ripe banana contain fructose which has a sweet taste;
15.	The male gametes do not swim towards the female gametes; but are carried by pollen tube to the ovule where female gametes are confined;
16.	To study many generations; within a short period of time;
17.	They have tracheal system which ramifies the body tissues; hence transports oxygen to individual cells;
18.	Plants are autotrophic while fungi are heterotrophic; Plants have cellulose in their cell walls while fungi have chitin in their cell walls; Plants have their body made up of roots, stems and leaves while fungi have their body made up of mycelium;
19.	a) Guttation;
	b) Hydathodes;
	c) Root pressure;
	d) When humidity is high;

