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DEPARTMENT OF PLANT SCIENCE AND APPLIED ZOOLOGY
HARMATTAN SEMESTER EXAMINATION (2007/2008 SESSION)

(7)

COURSE TITLE: GEMETICS I
COURSE CODE: BIO 201
INSTRUCTION: Answer all the questions on the other side of the question paper as provide.
TIME ALLOWED: 30 min.

Mendel proposed _1_ which are _2_ stating that each character is controlled by _3_, one from the _4_ and one from the _5_. The _6_ law deals with _7_ characters resulting in a F_2 phenotypic ratio of _8_ while the genotypic ratio is _9_. The gene that only manifests itself in its homozygotic condition is _10_ while _11_ manifests itself in both 12 and 13 conditions. Genes in its heterozygotic or _14_ condition do not _15_ or _16_ each other but 17 of each other in the next generation/meiosis.

Characters transmitted from generation to generation is known as _18_ character and it is controlled by _19_ while other character is called _20_ because it is through _21_. The possibility that a pregnant woman will give birth to a male child is _22_. The man determines the sex of his child because he is _23_ having _24_ while the woman is _25_ by having: 26

Agricultural productivity is controlled by _27_, which are _28_ and _29_ genes. The non-genetic factors are _30_ _31_ and _32_. A cell having _33_ of chromosomes is called _34_ cell while gamete cells are _35_ cells. The structural exchange between two non-homologous chromosomes is termed _36_ which result in _37_ sterility. When there are two simultaneous breaks in a single chromosome and the middle section turns through _38_ before healing up is known as _39_. This occurrence is called _40_ when one arm is involved and _41_ when _42_ and _43_ are involved. The resulting chromosomes from crossing-over in the one arm of the chromosome involved are _44_, _45_, _46_ and _47_ which will form _48_ in the next cell division. When a chromosomal configuration is star-shaped it means that _49_ had occurred in the pass while unequal chromosome lengths in a bivalent denotes a _50_. When only the maternal character is inherited by the offspring, it is known as _51_ and it is controlled by _52_. A mentally sick man will have normal _53_. The _54_ is a chain of polynucleotides made up of _55_, forming the backbone. _56_ and _57_ which are of two types, that _58_ and _59_. The first nucleic acid to evolve is _60_ and now performs _61_ role in _62_ synthesis. Prokaryotes have shorter life span than _63_ because both the _64_ and _65_ processes of protein synthesis occur in the _66_

In a population of 10,000 people, 9,750 can smell properly. The gene frequency is _67_ while the genotypic frequency is _68_. The homozygote smellers are _69_. The production of corn in a farm is controlled by _70_ inheritance.

When some progenies are better than the good parent and some are worse than the bad parent it is known as _71_. When a codon coding for an amino acid mutated to a terminator codon, the mutation is called _72_ mutation while replacement of amino acid codon is referred to as _73_ as in _74_. The nucleolous is the only Eukaryyotic organelle without _75_ while the _76_ associated with it code for _77_. The pairing of the nitrogenous bases are _78_ and _79_ while 80 replaces thymine in RNA.

(2)

ANSWERS TO BIO 201 HARMATTAN SEMESTER EXAMINATION 2007/2008 SESSION

Questn no.	Answer(Write in this column only)	Questn no.	Answer(Write in this column only)
1	His laws of inheritance	41	Pericentric inversion
2	Law of segregation & Dihybrid inheritance	42	Two chromosomal breaks
3	A pair of gene alleles	43	Two arms of Chromosomes
4	Father/male	44	Normal chromosome
5	Mother/female	45	Acentic chromosome
6	First/Monohybrid inheritance	46	Inverted chromosme
7	One pair of Contrasting	47	Dicentric chromosome
8	3:1	48	Break-fusion bridge
9	1:2:1	49	
10	Recessive gene	50	Eupolyploid
11	Dominant gene	51	Maternal inheritance
12	Homozygous	52	Cytogene
13	Heterozygous	53	Son/male
14	Hybrid	54	DNA
15	Contaminate	55	Phosphate group
16	Blend	56	Deoxyribose sugars
17	Segregate independently	57	Nitrogenous bases
18	Hereditable	58	Purine base
19	Gene	59	Pyrimidine base
20	Non-hereditable	60	Ribonucleic acid
21	Acquired	61	Transcription
22	½	62	Protein
23	Heterogametic	63	Eukaryotes
24	X , Y chromosome	64	Transcription
25	Homogametic	65	Translocation
26	X, X chromosome	66	Cytoplasm
27	Polygenes	67	P= 0.842 q =0.158
28	Major	68	$q^2 = 0.025$
29	Minor	69	$P^2 = 0.709$
30	Temperature	70	Polygenes
31	Soil type	71	Variation
32	Humidity	72	Monsense
33	22 pairs	73	Mis-sense
34	Autosomal	74	Sickle cell anaemia
35	Sex	75	Plasma membrane
36	Translocation	76	rRNA
37	50%	77	mRNA
38	180°	78	Purine bases
39	Paracentric inversion	79	Pyrimidine bases
40	Paracentric inversion	80	~~Adenine~~ Uracil

(67) ... = 1000 − 750 = 250

... = 250/1000 × 100% = 25%

... (q²) = 0.025

q = √0.025 = 0.158

P + q = 1

P + 0.158 = 1 ∴ P = 0.842

... Frequency P = 0.842, 2 ...

(68) $P^2 + 2Pq + q^2 = 1$

$P^2 = (0.842)^2 = 0.709$