University of Al-Qadisyia
College of Biotechnology
Dept. of Medical Biotechnology

Exam: Genetic
Time: Two hours
Stage: second

Final examination of first semester 2016-2017 ...

Q1-Chose the best answer: (15 marks)

1-Examples of x-linked recessive genes in human ---------
a-daltonism. b-Duchenne's muscular dystrophy.
c-Haemophilia. d-all above.

2-X-linked dominant genes in human ------
a-hypophosphatemia b-enamel hypoplasia.
c-congenital ichthyosis. d-a & b are correct.

3- In autosomal dominant traits. Two heterozygous parents can produce a -----
a- 1:1 ratio. b-2:1 ratio. c-3:1 ratio. d- 1:2:1 ratio .

4-Two affected parents always produce an affected child in -----
a-autosomal dominant disorder. b- autosomal recessive disorder.
c-x-linked. d-a & b are correct .

5-When Genes that assort independently of one another, because they are located on different chromosomes. This is referred to as -------

a-Mendel's first law of heredity. b-co dominance.
c- Mendel's second law of heredity. d-In complete dominance.

6-The chromosomes of similar size and nature often forms pairs during meiotic cell division, Known as ---------
a-non-homologous. b-sister chromatid. c-non-sister chromatid. d-homologous.

7-A gene or locus which suppressed or masked the action of gene at another locus was termed ----------
a-epistatic gene. b-mutation gene. c-dominant gene. d-recessive gene.

8-Whene out of two contrasting characters or traits only one expresses or appear in a generation, that trait is known as -------

a-recessive trait. b-dominant trait c-pleiotropy. d-sex-linked.

9-When Mendel crossed heterozygous F1 individual back to the parent homozygous for the recessive trait. This called----------

a-dihybrid cross. b-back cross. c-test cross. d-monohybrid.

10- The genotype is .....

a- the blueprint
b- the visible outcome.
c- the totality of alleles that an individual contains
d-a & c are correct.

11- Mendel tried to find out how different characters would behave in relation to each other in their inheritance from generation to generation
In his 2ed law by.....

a-monohybrid crosses
b- dihybrid crosses
c-multihybrid crosses
d-none of these are correct

12- The alleles governing the ABO blood group system in humans are

a-codominants b- incomplete dominance. c- dominance d-recessive

13- In man, the tendancy to develop diabetes mellitus is controlled by .....

a- Incomplete Penetrance
b- complete Penetrance
c-epistasis
d- none of these are correct

14- A point mutation in which a nucleotide of a triplet is replaced by another nucleotide called.....

a- background mutation
b- frameshift mutations
c- Substitution mutation
d-a & b are correct.

15- A female with 44 autosomes and only with one X chromosome in her body cells exhibits symptoms of .....

a- Poly-X Females
b- Turner's Syndrome
c- Hermaphroditism
d- Klinefelter's Syndrome

Q2-Answer of the following (10 marks)

A- What genotypes and their proportions would be produced by the following crosses ?
(a) IA i × ii ; (b) IAIB × IAi ;

B-A human disease known as cystic fibrosis is inherited as a recessive trait .A normal couples have affected child .what is the ratio of affected and un affected children.

Q3-Answer *only two* branches of the following (10 marks)

A-what is the Heterogametic Males

B-What are the effect of polyploidy?

C-Classify the Mutations According to the Size and quality?

Q4-Distinguish between epistasis and dominance. What does gene interaction mean (5 marks)

GOOD LUCK

Dr.Mohammed Al-Askeri
Head of Dept.

Sarab Hussein Khaleel
Lecturer