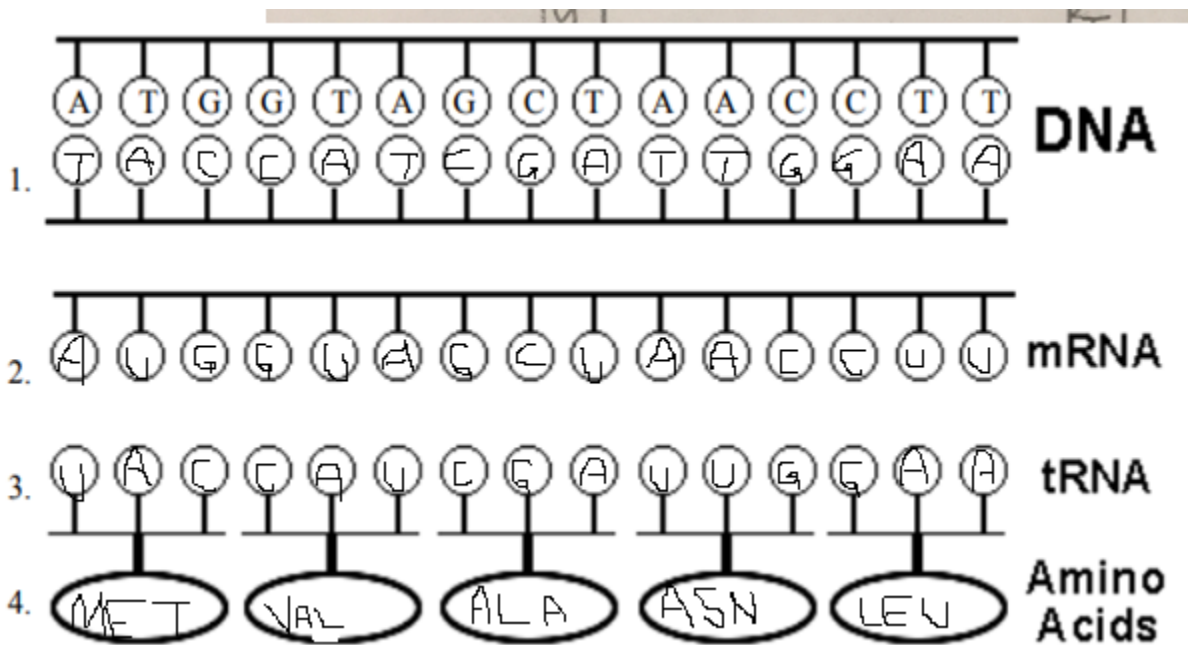


SANGAM S K M COLLEGE-NADI
YEAR 12 BIOLOGY WORKSHEET SOLUTIONS

Worksheet 4

1)



NOTE :

When reading the amino acid chart, always use the codons of mRNA to get the name of the amino acid, never tRNA.

2)

- (i) **Ggbb**- grey fur, red eyes
ggbb – white fur, red eyes
ggBB – white fur , black eyes
GgBb – grey fur, black eyes

(ii)

	Gb	Gb	Gb	Gb
gB	GgBb	GgBb	GgBb	GgBb
gB	GgBb	GgBb	GgBb	GgBb
gb	Ggbb	Ggbb	Ggbb	Ggbb
gb	Ggbb	Ggbb	Ggbb	Ggbb

How many out of 16 have gray fur and black eyes? $8/16 \times 16 = 8$

How many out of 16 have gray fur and red eyes? $8/16 \times 16 = 8$

How many out of 16 have white fur and black eyes? **0**

How many out of 16 have white fur and red eyes? **0**

3) **Lamarck – use and disuse (traits not used become extinct)**

-Inheritance of acquired trait(good traits are passed to the offspring)

Darwin – evolution by natural selection (nature selects the best to reproduce and survive, survival of the fittest)

Sangam S.K.M College-Nadi

Year 12

Biology

Worksheet 4 Solution

Questions:

1.

- (i) Identify the type of speciation demonstrated in the diagram.

Allopatric speciation

(ii)

_____ members of different population.

✓ they can inbreed.

_____ they produce infertile off springs.

✓ they have common gene pool.

✓ are reproductively compatible.

✓ produce fertile off springs.

2. **Homologous pairs of chromosomes cross over with each other and exchange chromosome segments takes place during prophase of meiosis I.**

3.

Type of disorder	Autosome / sex chromosome	Number of chromosomes	Physical effect
Downs Syndrome	Autosome	47	-Characteristic facial features (small chin, slanted eyes, flat nasal bridge, protruding tongue, small mouth)-Physical growth delay-Short stature-Heart defects-Susceptibility to respiratory functions.-Mental retardation. - Shorter life-span than normal.-Most are sexually-underdeveloped/ sterile
Turner's Syndrome	sex chromosome	45	causes them to be shorter.-Average height of an adult with this condition is 4 feet, 8 inches.-Puffy hands and feet at birth.-Wide shoulder-Broad chest-Webbed neck-Low hairline at the back of the neck-Increased number of small moles on the skin-Deep set

			nails.–Problems with heart, kidney and thyroid glands.
Klinefelter's Syndrome	sex chromosome	47	Affected males also have learning disabilities and behavioural problems such as shyness and immaturity.–Increased risks of certain health problems.–Children with this condition frequently have difficulty with language, including speech, reading and writing.–Approximately, 50% of males with this condition are dyslexic(i.e.inability to read and write).–Depressed or have poor judgement in stressful situations.