

**OCCUPATIONAL ENGLISH I**  
**LECTURE NOTES**  
**(Mesleki İngilizce I Ders Notları)**

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## ÖNEMLİ UYARI

**Bu sunum İstanbul Üniversitesi Fen Fakültesi Lisans öğrencilerinin eğitimlerine ücretsiz katkı sağlamak amacıyla hazırlanmış olup, bilimsel kaynak olarak gösterilemez, izinsiz kaydedilemez, kullanılamaz, çoğaltılamaz ve ticari bir ürün haline dönüştürülemez.**

# Lectures

1. Vocabulary
2. Vocabulary
3. Fill in the blanks
4. Fill in the blanks
5. Translating sentence
6. Translating text
7. Translating text
8. Answer questions related to a paragraph
9. Define the figures you see on the slide
10. Listen video and answer questions
11. Write a paragraph including in 50 words about the subject indicated below
12. How to write a remarkable/good CV and Cover Letter

# Please find the meaning of belowed vocabularies

- Observation:
- Hypothesis:
- Experiment:
- Population:
- Random-mating:
- Gene:
- Trait:
- Wild-type:
- Allele:
- Locus:
- Aerobic:
- An-aerobic:
- Generation:
- Phenotype:
- Genotype:
- Dominant:
- Recessive:
- Codominance:
- Pedigree:
- Offspring:
- Homozygous:
- Heterozygous:
- Crossing (Genetic):
- Linkeage (Genetic):
- Pure
- Reaction(Chemical)
- Buffer:
- Staining:
- Oxidation:
- Reduction:
- Chaperon:
- Acid:
- Base:
- Magnification:
- Resolution:
- Anabolism:
- Catabolsim:

# Please find the meaning of belowed vocabularies

- Equilibrium:
- Expression:
- Antigen:
- Antibody:
- Denature:
- Determination:
- Complementation (genetic):
- Constitutive:
- Downstream:
- Enhance:
- Interruption:
- Ligation:
- Modification:
- Overlapping:
- Recombination:
- Sibling:
- Artificial:
- Fragment:
- Diagnosis:
- Vector:
- Facilitate:
- Fertilization:
- Analogue:
- Homolog:
- Orthologous:
- Paralogous:
- Prosthetic: (gene):
- Transgene:
- Transcription:
- Translation:
- Termination:
- Transduction:
- Restriction:
- Respiration:
- Reception:
- Promoter:
- Probe:
- Primer:

# Please find the meaning of belowed vocabularies

- Morphogen:
- Metabolism:
- Leading:
- Lagging:
- Label:
- Initiation:
- Affected:
- Carrier:
- Congenital:
- Deletion:
- Domain:
- Participant:
- Sterilization:
- Swell:
- Subsequently:
- Bleed:
- Leakage:
- Contraception:
- Combustion:
- Subject:
- Amelioration:
- Obscure:
- Persistent:
- Propagation:
- Hamper:
- Insight:
- Pending:
- Tremendous:
- Landscape:
- Framework:
- Robust:
- Delineated:
- Evaluation:
- Comprehensive:
- Recent:
- Surrogate:
- Rudimentary:
- Elucidate:
- Causality:
- Challenge:
- Culprit:
- Devoid:
- Delivery:
- Recognition:
- Culprit:
- Devoid:
- Delivery:
- Recognition:
- Challenge:
- Modulate:

# Please find the meaning of belowed vocabularies

- Causality:
- Profound:
- Degrade:
- Progeny:
- Promise:
- Implicate:
- Diminish:
- Concomitant:
- Relevant:
- Context:
- Consequence:
- Predisposition:
- Acquisition:
- Crucial:
- Yield:
- Vernalization:
- Hibernation:
- Radioactive:
- Radiation:
- Radionuclide:
- Radiolysis:
- Fall out:
- Mutation:
- Mutagen:
- Mutant:
- Free Radical:
- Repair:
- Melanoma:
- Onkogene:
- Plankton:
- Parasite:
- Rippening:
- Feedback:
- Genera:
- Variety:
- Tissue:
- Cell:
- Organelle:
- Megaspore:
- Toxin:
- Ferment:
- Gland:
- Gestation:
- Meristem:
- Callus:
- Breeding:
- Domestication:
- Pseudopod:
- Passage:

# Fill in the blanks

- The spatial organization of chromatin in the ..... is important for proper ..... of gene expression.
- In this review we will ..... the multiple layers of chromatin organization, how this organization changes ..... development.
- Most developed economies ..... resources much faster than they can regenerate.
- The ..... surface is warming due to greenhouse gas .....
- While population growth has ....., the number of people ..... to increase



# Fill in the blanks

- An ecosystem is a ..... of animals and plants interacting with one another and with their physical .....
- The health and wellbeing of human ..... depends upon the services ..... by ecosystems.
- Ecologists study ..... systems.
- The Arctic is warming faster than the ..... of the world.
- All bacteria possess a remarkable capacity for.....tolerance to previously lethal drugs.

# Fill in the blanks

- In the twentieth century, some scientist, who had been trained as physicists, were interested in the study of ..... and consequently, their efforts made up for the field called molecular biology today.
- Since powerful microscopes were first introduced, they have proved to be useful tool for scientist to see what's going on in the ..... or ..... tissues.
- Modern analysis of DNA ..... is highly dependent upon the usage of different restriction endonucleases that permit the specific hydrolysis of ..... into large polynucleotides.

# Fill in the blanks

- Chloroplasts are the ..... within plant and ..... cells where ..... occurs. The oxidation-reduction reaction involved in oxidation of water, reduction of  $\text{NADP}^+$ , and synthesis of ..... via a chemiosmotic mechanism are located in the ..... membranes of the chloroplast. The soluble enzymes involved in the synthesis of glucose from ..... and ....., and utilizing the ATP and NADPH produced during the light reactions are in the ..... compartment of the chloroplast.

# Fill in the blanks

- Mendel paved the way to discovering that ....., which code for a particular ....., such as the shape of seeds produced are expressed in ..... and ..... genes. When ..... genes were present, they would supercede the presence of wrinkled ad were deemed the dominant gene. For example; if the genotype for ..... was Rr (where R is dominant and r is recessive), R would supercede the ..... gene and the ..... would express a ..... phenotype. If the genotype were rr (where both are recessive), there would be no dominant genes therefore the ..... phenotype for ..... is expressed. It was mentioned that in the first generation all ..... produced were round seeds, and in the second generation for every three that were ..... there would be one wrinkled seed. This can be expressed in a Punnett square.

# Fill in the blanks

- People are ..... to natural radiation sources as well as human-made sources on a daily basis. .... comes from many ..... including more than 60 naturally-occurring ..... materials found in soil, water and air. Radon, a naturally-occurring gas, emanates from ..... and ..... and is the main source of natural radiation. Every day, people inhale and ingest ..... from air, food and water. People are also exposed to natural radiation from ....., particularly at high altitude. On average, 80% of the annual dose of .....radiation that a person receives is due to ..... occurring terrestrial and cosmic radiation sources. Human exposure to ..... also comes from human-made sources ..... from nuclear power generation to medical uses of radiation for .....or ..... Today, the most common .....sources of ionizing radiation are ....., including X-ray machines.

# Translating Sentences

- Fish and shellfish were examined for toxic matter and found to contain 20 to 30 times as much mercury as would normally accumulate from the minute traces naturally present in sea water.
- In the manufacture of alcoholic drinks, fermentation is generally carried out under more controlled conditions.
- Cell membranes can be stimulated in several ways, including the application of an electrical discharge through the membrane or the addition of chemical substances to the membrane surface.
- After the cell has expanded, a further secondary wall of cellulose may be laid down inside the primary wall.
- Diffusion is the net movement of molecules (or ions) from a region of high concentration to a region of lower concentration.

# Translating Sentences

- The outer boundary of the protoplast the live matter of the cell, is a cell membrane which is more permeable to water than to many kinds of solutes.
- Winter varieties of wheat and barley sown in autumn in Britain flower the following year, but if sown in spring they do not flower unless the seedlings are exposed to a temperature of between 1 and 5°C for several days.
- As the ozone layer got thinner, more cancer forming ultraviolet rays reached the world.
- Many foods such as meat, milk, cheese and eggs, which contain fat and cholesterol, also contain high-quality proteins and valuable vitamins.
- One of the most remarkable aspects in the development process of a living being is that each part of the organisms continues to function as it grows.

# Translating Sentences

- The entry of sodium ions into the cell disturbs the resting potential.
- Even though they are basically similar, cells show considerable diversity in their contents, shape and functions.
- Substances such as enzymes, hormones, antibodies and cell wall precursors can be shed from cell by vesicles fusing with the cell membrane and emptying their contents to the exterior.
- When a flaccid cell is placed in water, the cell membrane separates the sap with a negative water potential from the water which has a water potential zero.
- How exposure to low temperatures promotes growing is still poorly understood.
- Unless the Ministry subsidizes cattle farming, a serious meat shortage is inevitable.



# Translating Text

Higher plants are sessile therefore are continuously exposed to different environmental stress factors, such as drought, salinity, heavy metals, nutritional disorders, radiation. Most of these stresses produce certain common effects on plants, like induced oxidative stress by overproduction of reactive oxygen species (ROS), besides their own specific effects. Thus, plants have developed their own specific response(s) against each of these stresses as well as cross-stress response(s). Investigating these responses is difficult under field conditions, but plant tissue culture techniques are performed under aseptic and controlled environmental conditions.

# Translating Text

The toxicity of iron, copper, and zinc was studied in soybean seeds of the NE 3297 variety irradiated at different dosages of gamma rays. After cultivating in plastic boxes for 14 days, the average plant heights, fresh weight, and chlorophyll content decreased in inverse proportion to radiation dose. As the radiation dose increased, the concentrations of iron, copper, zinc, soluble protein, and malondialdehyde increased, but the activities of superoxide dismutase and peroxidase enzymes activities were significantly decreased. The activities and the number of the superoxide dismutase isoenzymes also varied depending on the irradiation dosages.

# Translating Text

Reverse transcription followed by quantitative polymerase chain reaction analysis, or qRT-PCR, is an extremely sensitive, cost-effective method for quantifying gene transcripts from plant cells. The availability of nonspecific double-stranded DNA (dsDNA) binding fluorophors, such as SYBR Green, and 384-well-plate real-time PCR machines that can measure fluorescence at the end of each PCR cycle make it possible to perform qRT-PCR on hundreds of genes or treatments in parallel.

# Translating Text

An essential task in any molecular genetics laboratory is the isolation of genomic DNA (gDNA). Numerous DNA isolation protocols use phenol and chloroform to separate cellular molecules and debris from the DNA. Such organic reagents are toxic, hazardous, expensive, and require special containment facilities to maximize personnel safety and minimize environmental concerns. The disposal of phenol/chloroform waste also requires special equipment and care to avoid human and environmental exposure. The lack of well-equipped laboratories, particularly those in many developing countries, may prohibit the use of harmful chemicals.

# Translating Text

Mutation breeding is an alternative method for developing agriculturally important crops. A large set of Sagittario bread wheat seeds (*Triticum aestivum* L. cv.) were exposed to gamma ray irradiation (200 Gy) to obtain drought-tolerant mutant lines. To study drought tolerance, polyethylene glycol (PEG) 6000 was applied to the M<sub>2</sub> and M<sub>3</sub> individuals under in vitro conditions. Except in well-watered (100%) control plants, drought stress was triggered by a 50% decrease in the irrigation water applied to M<sub>3</sub> and M<sub>4</sub> plants in a greenhouse. Afterwards, 11 candidate drought-tolerant lines were obtained at the M<sub>4</sub> stage and subjected to molecular analysis. The highest percentage of polymorphisms (72.4%) was detected with Retrotransposons Microsatellite Amplified Polymorphism (REMAP) markers followed by Inter-Simple Sequence Repeat (ISSR; 62.07%) and Inter-Retrotransposon Amplified Polymorphism (IRAP) markers (52.94%). A dendrogram tree and a principal coordinate analysis (PCoA) plot classified the experimental samples into three distinctive groups. Additionally, the activities of several antioxidant enzymes were evaluated in both vegetative and flowering stages, and mutant lines showing the highest biochemical performance under stress were detected in the same group through phylogenetic analysis. Gamma ray irradiation was used to improve drought-tolerant wheat lines for forward/reverse genomic studies and marker-assisted selection in crops.

# Translating Text

To minimize the presence of RNases, it is important to keep equipment aside for use only with RNA extractions. Pipet tips and Eppendorf tubes should be used only for RNA work and not mixed. Gloves should be used at all times. Keep one set of gel electrophoresis equipment for use just with RNA. Keep solutions RNase free by not using the solutions in other procedures. Always use RNase-free water for solutions. The solid chemicals are NOT RNase free, therefore, buffers should be autoclaved. Tris-HCl buffers cannot be autoclaved.

Refer to the manufacturer's instructions and guidelines for stability and storage, and handle with eye and glove protection.

# Translating Text

Methylation of cytosine residues in DNA provides a mechanism of gene control. There are two classes of methyltransferase in *Arabidopsis*; one has a carboxyterminal methyltransferase domain fused to an amino-terminal regulatory domain and is similar to mammalian methyltransferases. The second class apparently lacks an amino-terminal domain and is less well conserved. Methylcytosine can occur at any cytosine residue, but it is likely that clonal transmission of methylation patterns only occurs for cytosines in strand-symmetrical sequences CpG and CpNpG. In plants, as in mammals, DNA methylation has dual roles in defense against invading DNA and transposable elements and in gene regulation. Although originally reported as having no phenotypic consequence, reduced DNA methylation disrupts normal plant development.

# Translating Text

Doubled haploidy is an important tool for plant breeders. It provides a rapid means of developing recombinant populations consisting of individuals that are homozygous and therefore genetically fixed. Homozygosity is also important in plant mutation breeding where many induced mutations are predicted to be recessive and mutant alleles need to be in a homozygous state before new traits are expressed. While production of doubled haploids has been described for many plant species, efficient means to validate that produced materials are indeed homozygous are needed. Polymorphism discovery methods utilizing enzymatic mismatch cleavage are ideally suited for validation of doubled haploid plants. We describe here a low-cost protocol that utilizes self-extracted single-strand-specific nucleases, standard PCR reactions and agarose gel electrophoresis that can be applied to most plant species.



# Translating Text

Plant peroxidases (class III peroxidases) are present in all land plants. They are members of a large multigenic family. Probably due to this high number of isoforms, and to a very heterogeneous regulation of their expression, plant peroxidases are involved in a broad range of physiological processes all along the plant life cycle. Due to two possible catalytic cycles, peroxidative and hydroxylic, peroxidases can generate reactive oxygen species (ROS) ( $\cdot\text{OH}$ ,  $\text{HOO}\cdot$ ), polymerise cell wall compounds, and regulate  $\text{H}_2\text{O}_2$  levels. By modulating their activity and expression following internal and external stimuli, peroxidases are prevalent at every stage of plant growth, including the demands that the plant meets in stressful conditions. These multifunctional enzymes can build a rigid wall or produce ROS to make it more flexible; they can prevent biological and chemical attacks by raising physical barriers or by counterattacking with a large production of ROS; they can be involved in a more peaceful symbiosis. They are finally present from the first hours of a plant's life until its last moments. Although some functions look paradoxical, the whole process is probably regulated by a fine-tuning that has yet to be elucidated. This review will discuss the factors that can influence this delicate balance.

# Translating Text

Ionizing radiation affects living things on an atomic level, by ionizing molecules inside the microscopic cells that make up your body. When talking about biological effects from ionizing radiation there are two categories of injury: somatic injury and genetic injury. Somatic injury is damage that occurs to the organism exposed to high levels of ionizing radiation and does not include reproductive cells. Effects like sickness, hair loss or internal bleeding are visible shortly after exposure. Other illness such as cancer may take a number of years to appear.

# Translating Text

The process of programmed cell death, or apoptosis, is generally characterized by distinct morphological characteristics and energy-dependent biochemical mechanisms. Apoptosis is considered a vital component of various processes including normal cell turnover, proper development and functioning of the immune system, hormone-dependent atrophy, embryonic development and chemical-induced cell death. Inappropriate apoptosis (either too little or too much) is considered a cause of the many human incident including neurodegenerative diseases, ischemic damage, autoimmune disorders and many types of cancer.

# Answer questions related to paragraph

Physiologists have long sought ways to define and measure human intelligence. And the theories of intelligence have grown more sophisticated since the 1800s when some believed mental abilities were determined by the size of a person's head. However, researchers still do not agree about certain fundamental principles of human thought. They, therefore, continue to discuss such basic debates as whether Heredity or the environment is more effective in forming intelligence.

1. **As we can understand from the passage, the basic controversy about whether intelligence depends upon heredity or the environment.....**
  - A) was hopefully discussed in the 1800s.
  - B) is now being avoided as it is seen the fruitless.
  - C) has only recently become a solemn affair for serious researches.
  - D) does not seem to have ended yet.
  - E) was much more significant in the 19<sup>th</sup> century than it is today.

# Answer questions related to paragraph

**2. According to the passage, in the early nineteenth century, some people were in the opinion that a person's mental capacity.....**

- A) could never be improved.
- B) depended on the size of his head.
- C) was completely changed by the environment.
- D) was purely genetic.
- E) Was fundamental to his personality.

**3. One may conclude from the text that a full understanding of the nature and the capacity of human intelligence.....**

- A) can only be received by expectationally sophisticated mind.
- B) has finally been obtained by modern scientist.
- C) can be achieved within the next few years.
- D) is unlikely to be achieved in the near future.
- E) will emerge via the practical rather than experimental studies.

# Answer questions related to paragraph

**2. The author explains that unless the burning of fossil fuels is radically reduced.....**

- A) global warming cannot possibly be held in check
- B) they will soon be used up
- C) traditional power supplies will not be adequate
- D) energy efficiency cannot be achieved
- E) there will be no energy crisis

**3. According to the passage, power supply and vehicle manufacturing .....**

- A) are two industries that do not affect global warming
- B) rely heavily on fossil fuels
- C) are environmentally less harmful than other industries
- D) have carried the problems of global warming everywhere
- E) have no common bases

# Answer questions related to paragraph

The ozone layer absorbs all the highest frequencies of ultraviolet radiation and prevents them from reaching the surface of the planet. A reduction of only 5 percent in its overall concentration would probably lead to about a 10 per cent increase in human skin cancers and a 10 percent drop in stratospheric ozone levels would increase the amount of hot and dangerous ultraviolet radiation on earth by 20 percent. Beyond this level the precise effects of ozone layer depletion on both human and wildlife are extremely difficult to predict.

1. **As the passage points out, major function of the ozone layer is to .....**
  - A) prevent the transmission of low frequency radiation
  - B) protect the earth from the harmful effects of ultraviolet radiation
  - C) reduce the amount of radiation in the stratosphere to 10 percent
  - D) regulate the frequencies of ultraviolet radiation
  - E) provide oxygen

# Answer questions related to paragraph

**2. The author points out that it is almost impossible to estimate**

.....

- A) the effects of a drop of more than 10 percent in, the level of ozone concentration
- B) how wildlife has been affected by the increase in ultraviolet radiation
- C) the extent of ozone depletion in recent years
- D) the annual rate of skin cancer due to ozone depletion
- E) what the effects of ozone hole will be

**3. The authors points out that a 10 percent increase in human skin cancer would be likely to occur.....**

- A) unless measures could be found to prevent ozone layer depletion
- B) should there be 20 percent increase in ultraviolet radiation
- C) if there were a 5 percent drop in the ozone layer density
- D) if urgent action were not taken to prevent it
- E) as long as they don't use preventive lotions



# Answer questions related to paragraph

Protoplasm, which is the fundamental basis of life, is constantly undergoing physical and chemical change. Life, therefore, is the resultant of these constantly occurring changes. There are two great groups into which living thing may be classified plants and animals. Both the plant and the animal kingdoms are very extensive. It is customary, therefore, to regard the science of life under two comprehensive heads, namely, botany which is the study of plants and zoology, which is the study of animals. Both subjects are subdivided into various specialized sections.

**1. It pointed out in the passage that life is the outcome of.....**

- A) the interaction between plants and animals
- B) change from a physical to a chemical state of being
- C) physical change taking place in the animal world
- D) the constant change, both physical and chemical, occurring in protoplasm
- E) the activities a person fulfills

# Answer questions related to paragraph

**2. It is understood from the passage that the science of botany**

.....

- A) is less specialized than that of zoology
- B) deals with a limited number of plants
- C) is concerned with the plant world
- D) is a subsection of zoology
- E) is not so well-known a zoology

**3. The author points out that the study of living things, although carried out under various specialized headings, .....**

- A) emphasized the importance of genes and species
- B) depends upon extensive field research
- C) is mainly related to zoology
- D) actually involves two basic fields of science
- E) may not be appreciated whatsoever

# Answer questions related to paragraph

The cheetah, the only mammal in the world that can sprint at speeds faster than 70 miles per hour, is on a rapid track to extinction. Two factors threaten its existence. The first is lack of genetic variation, which manifests itself in reproductive problems, excessive infant mortality, and vulnerability to disease. These seem to be exacerbated in captivity, where cheetahs are experiencing a precipitous decline in number. The second threat to the cheetah is loss of its natural habitat to agricultural expansion.

1. **The cheetah is the only mammal in the world that.....**
  - A) threatens the nature
  - B) is in danger of extinction
  - C) no other animals can reach its speed
  - D) has a speed reaching more than 70 miles per hour
  - E) is thought to give harm to agricultural expansion

# Answer questions related to paragraph

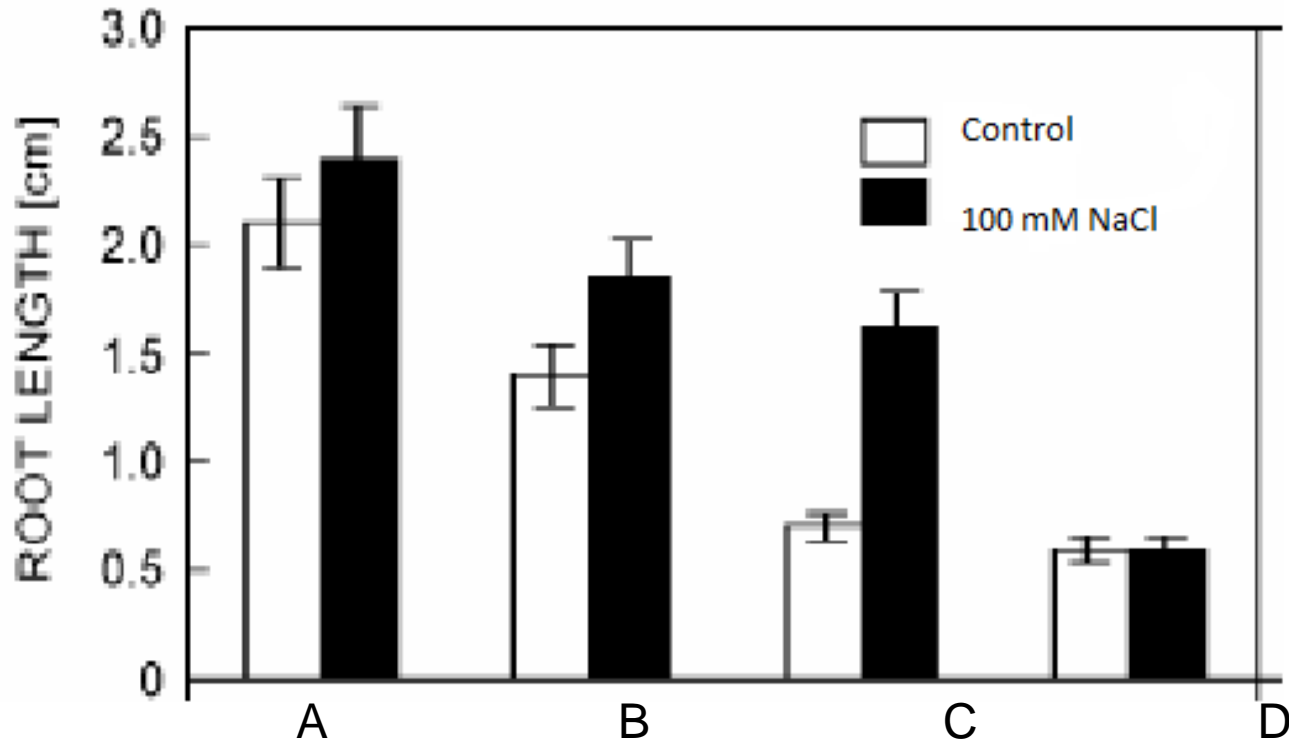
**2. The cheetah is threatened by extinction because.....**

- A) of its speed
- B) they are experiencing a sudden decline in number
- C) of reproductive problems
- D) they live in captivity
- E) of lack of genetic differentiation and agricultural growth

**3. Reproductive problems illustrate.....**

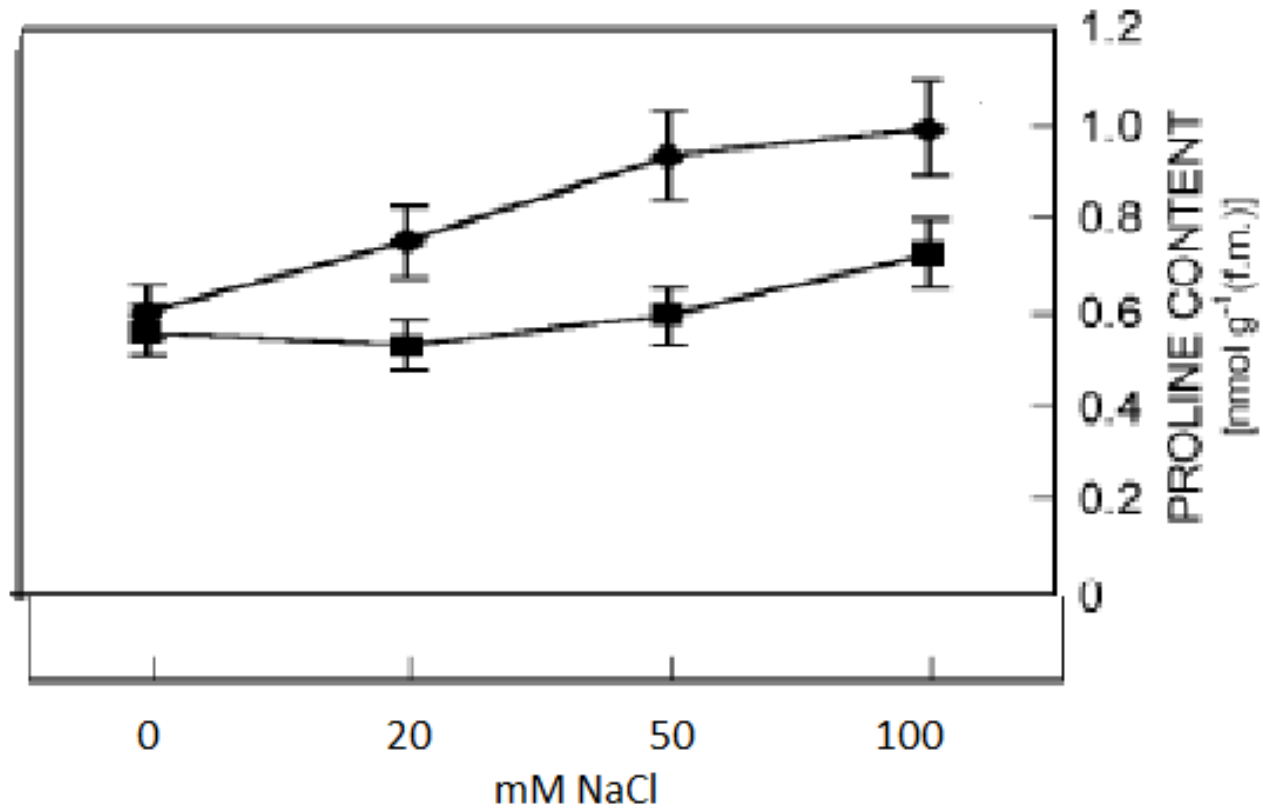
- A) that cheetahs don't have a variation in their genetic structure
- B) that the amount of infant mortality is excessive
- C) cheetah is threatened by extinction
- D) cheetah's vulnerability to disease
- E) loss of their natural habitat leads them to extinction

# Define the figures you see on the slide



Wheat, salinity (100 mM NaCl), 4 genotypes

# Define the figures you see on the slide



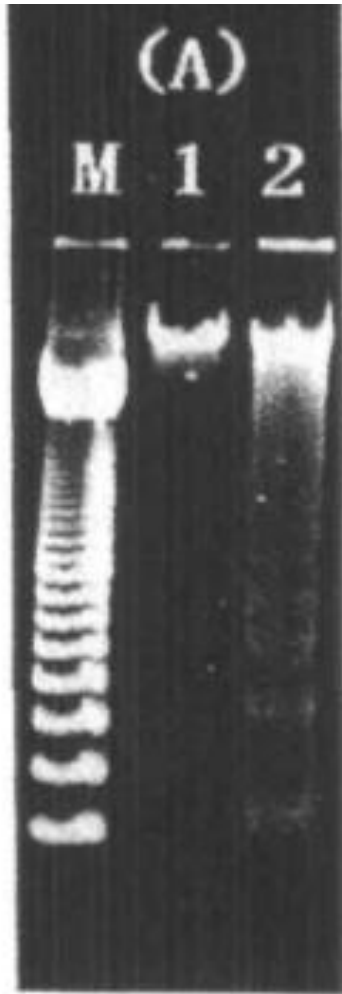
Wheat, salinity (0, 20, 50 and 100 mM NaCl), 2 genotypes

# Define the figures you see on the table

NaCl treatment (mM)	Root			
	Fresh weight (g/plant)	Dry weight (g/plant)	Water content (%)	Na <sup>+</sup> :K <sup>+</sup>
0	3.5 ± 0.23	0.40 ± 0.04	86 ± 5	0.90
100	3.2 ± 0.17	0.36 ± 0.03	74 ± 4	1.40
200	2.8 ± 0.33	0.30 ± 0.02	56 ± 3	2.30
300	2.0 ± 0.20	0.21 ± 0.03	47 ± 2	4.30

Wheat, salinity (0, 100, 200 and 300 mM NaCl).

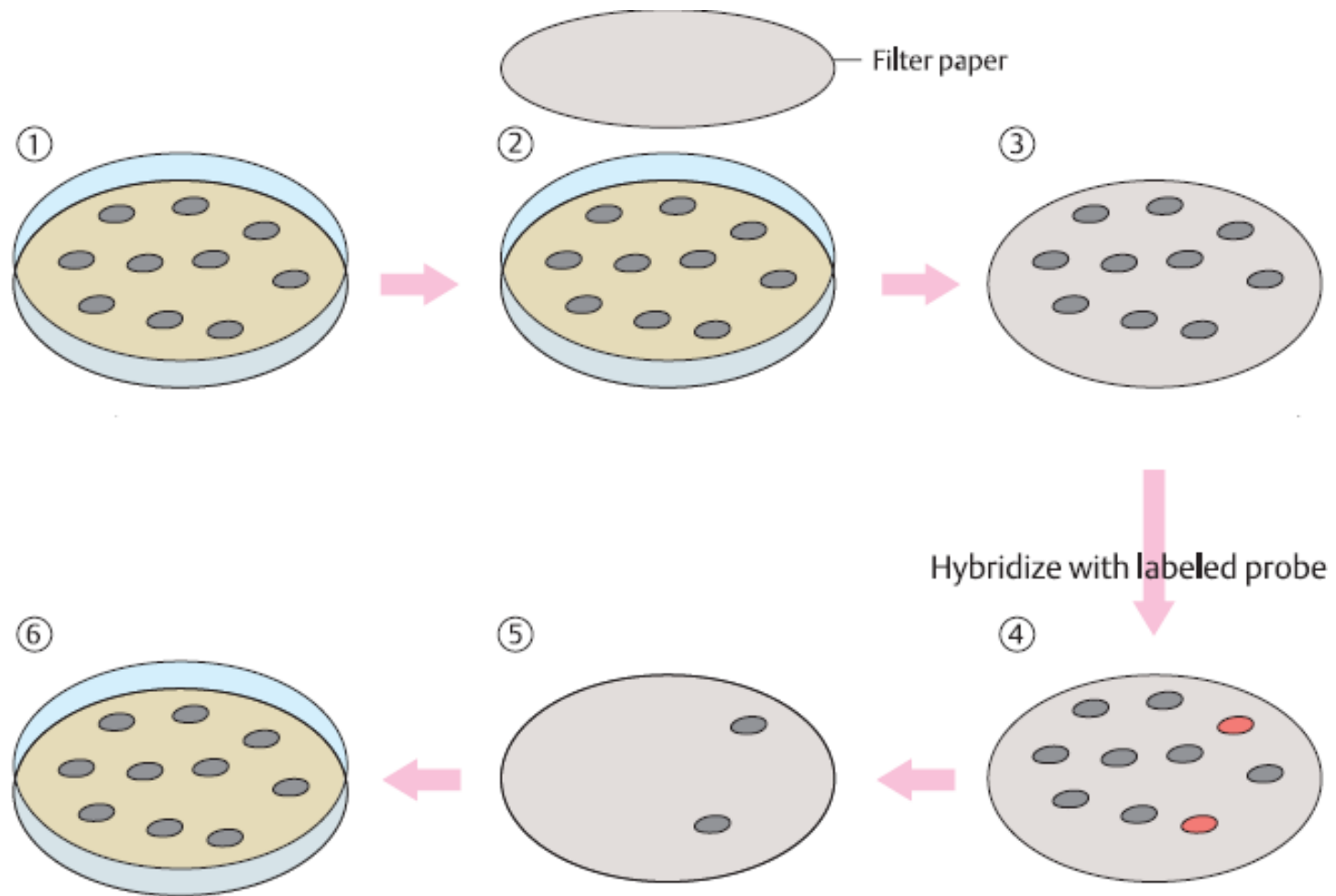
# Define the figures you see on the slide



Wheat,  
lane 1: DNA from control roots,  
lane 2: DNA from roots treated with 500 mM  
NaCl for 8 h.



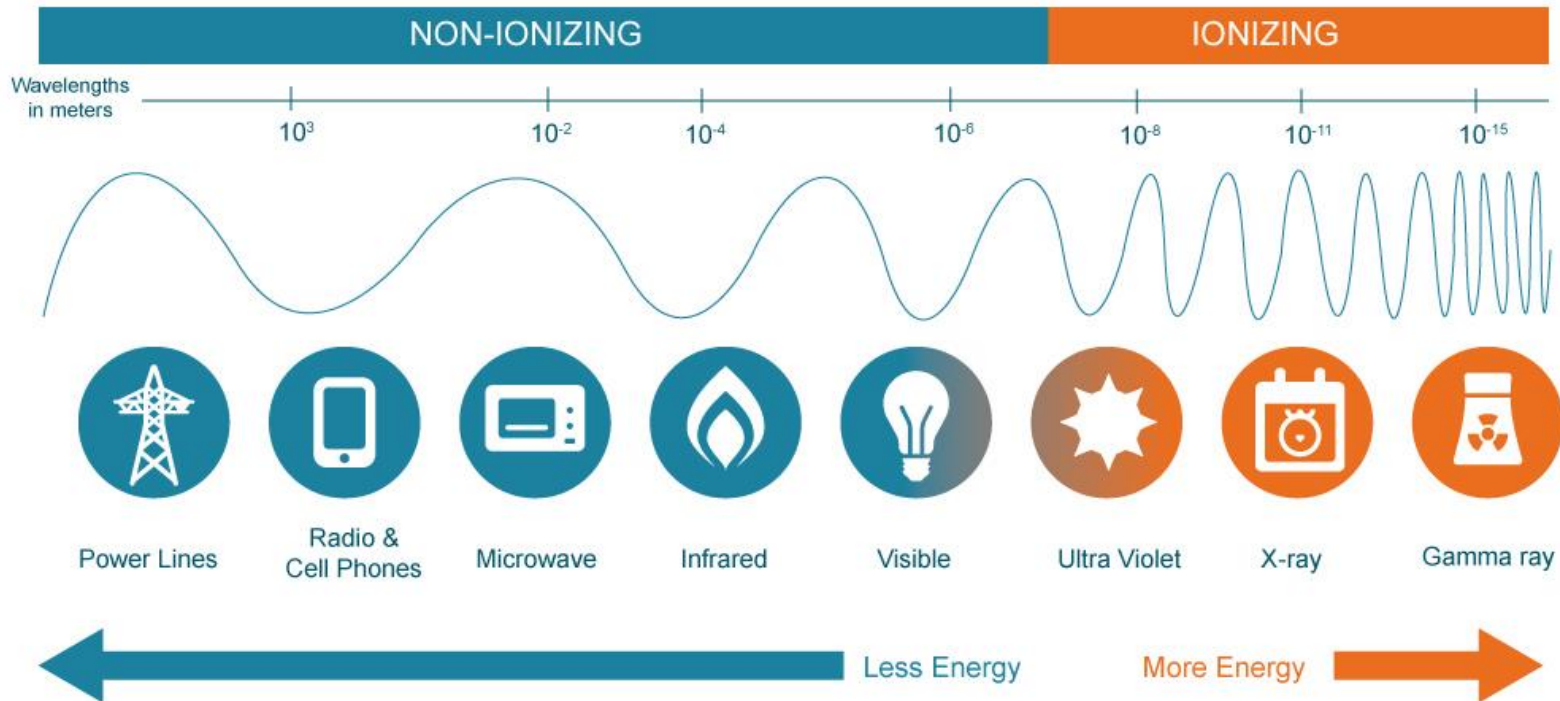
# Define the figures you see on the slide



**Define the figures you see on the slide**

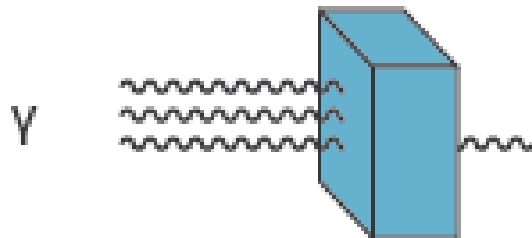
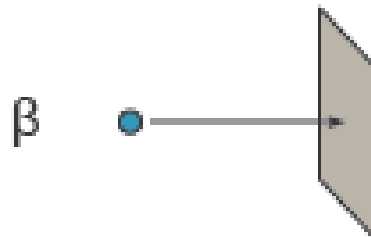
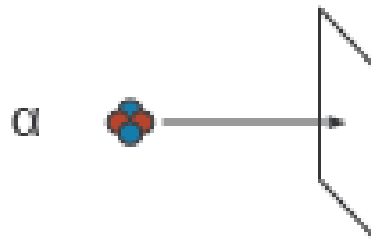


# Define the figures you see on the slide



# Define the figures you see on the slide

## Ionizing Radiation



**Listen video and answer questions**

# Spectrophotometer

<https://www.youtube.com/watch?v=N68gjC0gpwk>

## Listen video and answer questions

- Why should we check if there is a sample in the chamber before opening the device?
- How long will we wait after turning on the device?
- Why will we wait for 20 minutes?
- What is the name of the equipment in which we measure our samples?
- What is the reason to touch a cuvette only on the ridged sides?
- What was the composition of the blank?
- Why did we use water as a blank?

**Listen video and answer questions**

What is Evolution?

<https://www.youtube.com/watch?v=GhHOjC4oxh8>

## **Listen video and answer questions**

- Can we explain the beginning of life on earth by theory of evolution?
- What is evolution?
- What is a mutation?
- How did humans guide the evolution of dogs?



**Listen video and answer questions**

## **Cell Culture 101 1**

<https://www.youtube.com/watch?v=dSxH9xNmhWg>

# Listen video and answer questions

- What is cell culture?
- Which cell type did she use?
- What is the role of air flow hood in cell culture?
- What are the reagents used for cell culture?
- What is the name of the medium?
- What are the supplements to the medium?
- How did she disinfect items to be used in air flow hood?
- What is the role of the trypsin?
- What are the pros and cons of a cell culture dish?
- Why was the incubator adjusted to 37 degrees and 5% CO<sub>2</sub>?
- What are the steps of the passage?
- Why is the cell density important?

**Listen video and answer questions**

## How to Make an SDS-PAGE gel

[https://www.youtube.com/watch?v=EDi\\_n\\_0NiF4](https://www.youtube.com/watch?v=EDi_n_0NiF4)

## **Listen video and answer questions**

- How many parts does the gel apparatus have?
- Why did we add water before purging the gel?
- Why did we make a marker?
- How did we remove the bubbles?

**Listen video and answer questions**

How to Purify Molecular Grade Plasmid DNA

<https://www.youtube.com/watch?v=DnT6Qd8mvwQ>

## Listen video and answer questions

- What is the first step of plasmid isolation?
- What happens to sample when it is neutralized?

**Write a paragraph including in 50 words about  
the subject indicated below**

- **Radiation**
- **Mutation**
- **Cancer**
- **Photosynthesis**
- **DNA Repair**

# How to write a remarkable CV

- A CV (curriculum vitae) allows you to summarise your education, skills and experience, selling yourself to employers.
- A standard CV in the UK should be no longer than two sides of A4.
- Only include the main facts; if your CV is just one page, that's fine, as employers only want to read relevant information. Some medical or academic CV may be longer depending on your experience.
- A CV includes in contact details, profile, education, work experience, skills and achievements, interests and references.
- Use active verbs wherever possible. For example, you could include words like 'created', 'analysed' and 'devised' to present yourself as a person who shows initiative.
- There should be no spelling or grammar mistakes in your CV. Use a spell checker and enlist a second pair of eyes to check over it.



# How to write a remarkable CV

- Avoid using generic phrases such as 'team player', 'hardworking' and 'multitasker'. Instead, provide real-life examples that demonstrate all of these skills.
- Take a look at the company's website, local press and the job advert to make sure that your CV is targeted to the role and employer.
- Decide whether the chronological, skills-based or academic CV is right for you.
- Don't put the term 'curriculum vitae' at the top of the page.
- Provide a professional-sounding email address.
- Never lie or exaggerate on your CV or job application.
- If you're posting your CV online don't include your home address, as you could be targeted by fraudsters.
- You should always include a cover letter unless the employer states otherwise. It will enable you to personalise your application to the job. You can draw attention to a particular part of your CV, disclose a disability or clarify gaps in your work history.

# How to write a good Cover Letter

A cover letter is a document sent alongside your CV when applying for jobs. It acts as a personal introduction and helps to sell your application. A cover letter is necessary as it gives you the chance to explain to an employer why you're the best candidate for the job. You do this by highlighting relevant skills and experience; therefore you should always write your cover letter with the position you're applying for in mind.

Cover letters should complement your CV but not duplicate it. The general consensus among recruiters when it comes to the length of these documents is the shorter the better. Typically three to five short paragraphs, cover letters should not exceed one A4 page. If sending electronically, put the text in the body of the email rather than as an attachment, to avoid it being detected by spam filters.

Applications should always include a cover letter unless the job advert instructs you differently.

# How to write a good Cover Letter

Keep your cover letter brief, while making sure it emphasises your suitability for the job. It can be broken down into the following sections:

**First paragraph** - The opening statement should set out why you're writing the letter. Begin by stating the position you're applying for, where you saw it advertised and when you are available to start.

**Second paragraph** - Cover why you're suitable for the job, what attracted you to this type of work, why you're interested in working for the company and what you can offer the organisation.

**Third paragraph** - Highlight relevant experience and demonstrate how your skills match the specific requirements of the job description. Summarise any additional strengths and explain how these could benefit the company.

**Last paragraph** - Use the closing paragraph to round up your letter. Reiterate your interest in the role and indicate your desire for a personal interview. Now is the time to mention any unavailable dates. Finish by thanking the employer and say how you are looking forward to receiving a response.

# How to write a good Cover Letter

- Always try and address your cover letter directly to the person who will be reading it. Bear in mind that you're more likely to receive a reply if you send it to the right person.
- Advertised positions usually include a contact name, but if not, it is worth taking the time to find out who the letter should be addressed to. You can do this by searching the company's website for details of the hiring manager or alternatively you could call the organisation to ask who you should address your letter to. Don't be afraid to do this, many employers will appreciate you taking the time and initiative to do so.
- If you're struggling to find a named contact you can use a general salutation such as:
  - Dear Sir/Madam
  - Dear Hiring manager
  - Dear Human resources director.
- However, general greetings should only be used once you have exhausted methods of finding a named contact. How you sign off your cover letter depends on how you addressed it. If you include a named contact sign off 'yours sincerely'. If you use a general one finish with 'yours faithfully'.

**THANKS FOR YOUR PARTICIPATION**