YEAR 12 - Batch 1 & 2 - BIOLOGY

WEEK 8 (18th Oct - 22nd Oct)

Work sent to students through Class Bio Whats App Group /Google Classroom

Topic 2 .1– Eukaryotes

L.O – Describe the use of cytological techniques – Microscopy, autoradiography & ultracentrifugation.

Biology Students Book 1

B2 – Monday – 5th period(Zoom) **B1- Tuesday – 4th period(Zoom)**	**Students able to** ● Define key terms- Magnification & Resolution ● Differentiate uses of Optical & electron microscope ● Describe the use of differential centrifugation , density dependent centrifugation ● Calculate magnification & actual size of cells using the formula M = O/A. **Resources:** Board works – Cell Structure , power point - cytological techniques & Video link **https://www.youtube.com/watch?v=b4WOsYktdn4** **https://www.youtube.com/watch?v=SjaFUJhzY9Q** **Students to research on :** **●Preparation of specimens used for microscopy** **●Use of Autoradiography in cell study**
B2 - Wednesday – 5th period (Zoom) **B1 - Thursday – 1st period(Zoom)**	**Students able to** ● Calculate magnification & actual size of cells using the formula M = O/A & scale bar concept . ● Identify the various stages involved in preparing specimens for microscopy- fixation ,dehydration, embedding, sectioning & staining ● Interpret the use of Autoradiography & Centrifugation in biochemical analysis of cell components **Resources:** Board works - Cell Structure , power point- cytological techniques & Video link **https://www.youtube.com/watch?v=TLm37BbR1mo** **https://www.youtube.com/watch?v=UHnxiF6qzhI**
B1 - Thursday– 2nd period (GC) **B2 - Monday – 8th period(GC)**	**Asynchronous learning** Exam style questions-2.1 text book. Answer the questions given on page 90 & 91 and task to be turned in Google classroom

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Topic 1-Biological molecules 2 [DNA and protein synthesis]

L.O - ●Analyse the processes of transcription in the nucleus and translation at the ribosome, including the role of sense and antisense DNA, mRNA, tRNA and the ribosomes ●Understand the term 'gene mutation' and describe base deletions, insertions and substitutions, explain the effect of point mutations on amino acid sequences as illustrated by sickle cell disease in humans

Biology Students Book 1

B1- Sunday – 8th period (Zoom) **B2- Tuesday – 3rd period (Zoom)**	**Students able to-** ●**Describe** with the aid of diagrams, how the sequence of nucleotides within a gene is used to construct a polypeptide, including the roles of messenger RNA, transfer RNA and ribosomes. ●**Explain** amino acid activation and translation. **Video and PPT: Steps of protein synthesis** **Websites:** www.science.co.uk/biology/proteinsynthesis.html, www.internet4classrooms.com ● Homework, practice and support: Mastering *Nucleic Acids – Transcription and translation* ● Homework, practice and support: Mastering *Nucleic Acids – Compare and contrast DNA replication and transcription* ● There is an excellent animation at www.nationalstemcentre.org.uk (search for 'from DNA to protein'). **BOARD WORKS- Protein synthesis-No -4 -10** **Worksheet – Nucleic Acids and Protein Synthesis** **Text Book Page Numbers – 44-49**
B1 - Monday – 1st & 2nd period (Zoom) **B2- Thursday – 5th and 6th period (Zoom)**	**Students able to-** ●Draw and explain sickle cell anaemia as an example of gene mutation. ●Describe the effect of gene mutation on amino acid sequences. ●Analyse the effect of gene mutation on the shape and function of proteins

	BOARD WORKS –Gene mutations -No 20 **Video and PPT: Gene and chromosome mutations** **Websites:**www.science.co.uk/biology/mutation.html, www.internet4classrooms.com **:**www.science.co.uk/biology/mutation.html, www.internet4classrooms.com Resources can be found at www.hhmi.org under 'Educational Materials' and several are available on www.nhs.uk (search for 'sickle cell'). Homework, practice and support: Mastering *Mutations* **Text Book Page Numbers – 50-51**