YEAR 9 A - F – BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

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

Topic 3a: Sexual & Asexual Reproduction.

L.O.: Describe the importance of mitosis in growth, repair and asexual reproduction and its role in development of cancer.

Sunday-Zero period(boys) **Sunday-7th period(girls)**	**Zoom: Describe** the role of mitosis in growth, repair and asexual reproduction in plants and animals. https://www.youtube.com/watch?v=i9zj9V8OWRk https://www.youtube.com/watch?v=Fh9b6a-3DLQ Textbook page : 50-51 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**Predict** the significance of mitosis in asexual reproduction and growth. ●**Describe** few differences between sexual and asexual reproduction. ●**Explain** the stages of asexual reproduction in strawberry plants, grass, potato, onion, Kalanchoe, ginger & Komodo dragon
Sunday -1st period(boys) **Wednesday-2nd period (girls)**	**Zoom: Describe** the importance of mitosis in the development of cancer. **https://www.youtube.com/watch?v=BmFEoCFDi-w** Textbook page : 50-51 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**Define** cancer. ●**Identify** the cause of cancer .●**Explain** how cancer develops in humans.
Sunday-2nd period(boys) **Wednesday -3rd period(girls)**	**GC:** Students submit a Written research assignment on advancements in cancer treatment. **Resources:** Web

YEAR 10 A-F – BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

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

SB4e-Breeds & Varieties

L.O- Recall Selective Breeding &Genetic Engineering

Sunday – 3rd Period (Boys) **Sunday – 5th Period (Girls)**	**ZOOM SESSION/GOOGLE MEET** Discussion of Text Book Questions **Resources: Text book questions pg.84-85** **Students able to:** **Describe** why new breeds and varieties are created. **Explain** how selective breeding is carried out. Enlist stages of genetic engineering. **Describe** the main stages of genetic engineering.

SB4h-GM AND AGRICULTURE

L.O- Discuss the advantages and disadvantages of genetic engineering to produce GM organisms including the modification of crop plants, including the introduction of genes for insect resistance from *Bacillus thuringiensis* into crop plants

Monday-4th period (Boys) **Tuesday -1st Period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Students must watch the video link given below on** https://www.youtube.com/watch?v=pQQpzIlba3Y Read Text book Page- 90-91 Complete questions 1-4,S1&Exam Style Question **Resources:** PowerPoint /Board work &Video link **Students able to:-** **Describe** how gene coding for herbicide resistance can be inserted into plants***. Explain*** how crop plants can be modified to make them resistant to insect pests. List a **few** advantages & disadvantages in producing pest resistant GM plants **Explain** how using GM organisms can increase the amount of food we produce (Golden rice). **Evaluate** the advantages and disadvantages of using GM organisms.

SBf4g-Genes in Agriculture and medicine

L.O- Describe genetic engineering as a process which involves modifying the genome of an organism to introduce desirable characteristics. Evaluate the benefits and risks of genetic engineering and selective breeding in modern agriculture and medicine, including practical and ethical implications

Tuesday -2nd Period (Girls) **Thursday-1st Period(Boys)**	**ZOOM SESSION/GOOGLE MEET** **Students must watch the video link given below on** https://www.youtube.com/watch?v=gu9T91GJXDo https://www.youtube.com/watch?v=CfTnVx31pr0 Read Text book Page- 85& 88-89 Complete page 85 question 6-7,Exam Style question&S1,Page 89-qn 5-6,E1& Exam Style question **Resources:** PowerPoint /Board work &Video link **Students able to:- Describe** the production of medicinal products from milk produced by transgenic animal. **Evaluate** the benefits and risks of genetic engineering and selective breeding in modern agriculture and medicine including practical and ethical implications.. **Explain** how using GM organisms can cause problems in the environment
Wednesday-4th period (Girls) **Thursday-2nd Period (Boys)**	**GOOGLE CLASSROOM** **Students to complete the Research work on Advancement in Genetic Engineering Techniques with examples and to turn in their work in GC**

YEAR 11 G/ H – BIOLOGY (IGCSE)

WEEK 24 (7th Feb – 11th Feb)

Work sent to students through Class Bio WhatsApp Group/G mail/Google Classroom

Topics 20 & 22: Selective breeding& Genetic Modification.

L.O.: Describe the process of cloning an organism and understand main stages of genetic engineering in bacteria including the use of: a. restriction enzymes b. ligase c. sticky ends d. vectors.

Sunday- 4th period	**Zoom: Describe** the stages in the production of cloned mammals involving the introduction of a diploid nucleus from a mature cell into an enucleated egg cell, illustrated by Dolly the sheep. https://www.youtube.com/watch?v=FjBgLIE7514 https://www.youtube.com/watch?v=Krh7V3Z4Vr4 Textbook page : 273- 276 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**Define** a clone● **Describe** the stages in the production of cloned mammals. ●**Suggest** the ethical implications associated with cloning
Monday- 7th period	**Zoom: Describe** main stages of genetic engineering in bacteria including the use of: a. restriction enzymes b. ligase c. sticky ends d. vectors. https://www.youtube.com/watch?v=016VgHKi-Lk https://www.youtube.com/watch?v=LP5TctAPPUI Textbook page : 289-300 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**Define** transgenic organism. ●**State** the use of restriction enzymes and ligase enzymes in genetic engineering **.●Explain** how plasmids and viruses can act as vectors, which take up pieces of DNA, then insert this recombinant DNA into other cells**.**
Tuesday – 3rd and 4th period	**Zoom: Describe** how large amounts of human insulin can be manufactured from genetically modified bacteria that are grown in a fermenter. https://www.youtube.com/watch?v=LP5TctAPPUI&t=65s

	Textbook page : 289-300 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**State** the use of plasmid in genetic engineering●**Describe** the main stages of genetic engineering in bacteria including the use of bacteria to produce insulin ●**Evaluate** the use of genetically modified bacteria for large scale insulin production.
Wednesday – 5th period	**GC:** Students complete Worksheet on genetic engineering and turn in their work on GC **Resources**: Worksheet

YEAR 11 A - F BIOLOGY (GCSE)

WEEK 24 (7th Feb – 11th Feb)

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

Topics–SB 5jThe immune system & SB5l-Monoclonal antibodies.

L.O – Discuss immune responses (cell mediated, humoural ,primary & secondary) in human , immunization /vaccination /herd immunity. Describe production of monoclonal antibody & uses linked to monoclonal antibodies in medical field.

Sunday-6th period (girls) **Sunday-8th period (boys)**	**Zoom session-**Explain the role of the specific immune system of the human body in defense against disease, **Resources**: Board works & Video link https://www.youtube.com/watch?v=PSRJfaAYkW4 https://www.youtube.com/watch?v=HSrrPdJDqxM https://www.youtube.com/watch?v=N3L4kQqsGPQ **Students able to** ●Give **two** differences between antigen & antibody .●**Explain** the role of B& T lymphocytes in immune response.**Describe** how antigens trigger the release of antibodies and production of memory lymphocytes.●**Describe** the role of antibodies in the immune response **Discussion of textbook questions.(page 114)**

Monday -3rd period (girls) **Tuesday -5th period (boys)**	**Zoom session –Primary and secondary immune response.** Resources : Board works & Video link **https://www.youtube.com/watch?v=RYYiPy5mzOI** **Students able to** Enlist few differences between primary immune response& secondary immune response ●Analyse & interpret the graphs showing the changes in antibody level during primary & secondary immune response.●State that the immune system protect the body by attacking pathogens.●Explain the role of memory lymphocytes in triggering a secondary response
Tuesday-7th period (girls) **Wednesday-6th period (boys)**	**Zoom Session– Immunization.** Resources: Board works & Video link **https://www.youtube.com/watch?v=uPeZBhJYlnU** **Students able to** ●Define immunization .●**Describe** the various ways by which immunization can be achieved.●Explain how immunisation protects against infection by a pathogen.●Enlist **few** advantages & disadvantages of vaccination. ●**Explain** the advantages of vaccination. ●Predict the possible risks associated with immunization.●Discuss advantages and disadvantages of immunisation including herd immunity. **Discussion of textbook questions.(page 115)**
Tuesday- 8th period (girls) **Thursday – 5th period (boys)**	**Zoom session-Production and uses of monoclonal antibodies.** Resources : Board works & Video link **https://www.youtube.com/watch?v=cGNvdB3qNw4** **https://www.youtube.com/watch?v=Bgde7orTxD8** **Students able to** ●Define monoclonal antibodies. ●Enlist the major stages involved in production of monoclonal antibodies ●Explain the role of B lymphocytes & hybridoma cells to produce monoclonal antibodies Suggest **few** uses of monoclonal antibodies● Describe how pregnancy test is done with the use of monoclonal antibodies.● Explain the role played by the monoclonal antibodies to detect cancerous cells & blood clots?●Explain how monoclonal antibodies are used in diagnosis of disease (including blood clots and cancer).●Explain the advantages of monoclonal antibodies compared with drug and radiotherapy treatments to target cells. **Discussion of textbook questions. (page 120 & 121)**
Wednesday-7th period (girls) **Thursday – 6th period (boys)**	**GC** Students to complete the textbook questions on immune response ,vaccination & monoclonal antibody and turn in their work.

YEAR 12 - Batch 1 & 2 - BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

Work sent through Google classroom/G mail/Online Quiz/ZOOM Learning Platform

Topic 4.1.4 Exchange and transport

L.O – Discuss Active transport and Bulk transport

Biology Students Book 1

B1- Sunday – 8th period **B2- Tuesday – 3rd period**	**GC-Asynchronous learning** **Exam style questions-. Answer the questions given on page 222 &223** and task to be turned in Google classroom **Text Book Page Numbers – 222 &223**
B1 - Monday – 1st & 2nd period (Zoom) **B2- Thursday –5th and 6th period (Zoom)**	**Students able to** ●Describe how large molecules can be transported into and out of cells through the formation of vesicles, in the processes of endocytosis and exocytosis. ●Analyse the importance of active transport in cells and bulk transport ●Explain the process of bulk transport, including the role of ATP ●Describe how the hydrolysis of ATP provides an accessible supply of energy for biological processes **Board works-Transport across the membrane [slide No-16 - 30]** **Video and PPT: endocytosis & exocytosis and active transport.** **Websites:**www.science.co.uk/biology/bulktransport.html, www.internet4classrooms.com Research the link between carrier proteins for active transport and the symptoms of the genetic disease cystic fibrosis. Write down the five most important facts Make a comparison chart for the transport of substances **Text Book Page Numbers – 220 & 221**

YEAR 12 - Batch 1 - BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

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

Topic 2 .3 – The Cell Cycle

L.O – Discuss the method in observing stages of cell division in onion root tip.Describe the role of mitosis and the cell cycle for growth and asexual reproduction in organisms .

Biology Students Book 1

B1- Tuesday– 4th period (Zoom)	**Students able to** ● Identify stages required for preparing onion root tip squash to see the stages of mitosis. ● Expain the importance of each stage involved in the preparation of slides . ● Graphically **analyze and interpret** the changes in DNA content during cell cycle including mitosis**.** . **Resources:** Video link https://www.youtube.com/watch?v=5-ur7bWqlDQ&t=4s **https://www.youtube.com/watch?v=VnCP2OxaSug** **Students to complete text book questions pg.116**
B1- Thursday– 1st & 2nd period(Zoom)	**Students able to** ● **Identify** ways of asexual reproduction in organisms – Binary fission, Sporulation, Budding &Vegetative reproduction ● **Describe** ways of asexual reproduction in organisms – Binary fission, Sporulation, Budding &Vegetative reproduction ● **Significance** of regeneration & parthenogenesis in animals **Resources:** Boardworks & PowerPoint - Asexual reproduction & Video link **https://www.youtube.com/watch?v=VN_p20dDrnY** **https://www.youtube.com/watch?v=2WNoErUFAvI** **https://www.youtube.com/watch?v=6Ew6mqwgGR0** **Students to complete text book questions pg.119**

YEAR 12 - Batch 2 - BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

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

Topic 2 . 3 - 4 – Growth and repair & Topic 2 . 1 - 4 – Meiosis and sexual reproduction

L.O – Discuss role of mitosis in growth & measuring and analyzing growth in organisms & meiosis in forming gametes for sexual reproduction .

Biology Students Book 1

B2- Monday – 5th & 8th period(Zoom)	**Students able to** ● **Identify** ways of measuring growth in organisms ● **Describe** growth pattern in various organisms-bacteria/yeast, plant, insects & human ● **Compare** growth in plants and animals **Resources:** Boardworks & PowerPoint - Asexual reproduction & Video link **https://www.youtube.com/watch?v=hJWPx5JwPAA** **Classroom.google.com/u/2/c/MjI0MDM1NzY4OTA3/gb/sort** **Students to complete text book questions pg.121**
B2- Wednesday– 5th period(Zoom)	**Students able to** ● **Identify** gametes and gonads in animals and plants . ● **Describe** stages of meiosis 1 & 2 ● **Discuss** the role of synapsis, crossing over & independent assortment **Resources:** Boardworks & PowerPoint - Cell division Video link **https://www.youtube.com/watch?v=nMEyeKQClqI** **https://www.youtube.com/watch?v=BmSTdA3wIs0** **Students to complete text book questions pg.131**

YEAR 13 -Batch 1 - BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

Work sent through Google classroom/G mail/Online Quiz/ZOOM Learning Platform

Topic 10-Ecosystems [10.1,2,3]

L.O - Effect of abiotic factors on populations within an ecosystem

Biology Students Book 2

B1- Tuesday–5th period (Zoom)	**Students able to -** Define abiotic factors, give examples. ●**Investigate the effect** of biotic factors like temperature soil, wind and water. ●Give one example of how an abiotic factor can affect the abundance of organisms. ●**Describe** edaphic factor and give three examples ●Why do abiotic factors have a major impact on the distribution of all organisms in a habitat **BOARD WORKS –Ecosystem and populations—[-3 -19]** **Video and PPT:** Effect of abiotic factors on populations. **:**www.science.co.uk/biology/abiotic factors.html, www.internet4classrooms.com **Text Book Page Numbers – 250 to 251**
B1- Thursday – 1st and 2nd period(Zoom)	**Students able to :** Differentiate between inter and intra specific competition. ●Why do abiotic factors have a major impact on the distribution of all organisms in a habitat ●The extremely low precipitation of subtropical desert biomes might lead one to expect fire to be a major disturbance factor. However, fire is more common in the temperate grassland biome than in the sub tropic desert biome. Why is this**?**● Why is it essential for organisms to maintain a relatively constant body temperature?● Describe adaptations that help the organisms cope with changes in environmental temperature **BOARD WORKS –Ecosystems and populations-No [6-12]Video and PPT: Biotic factors** **:**www.science.co.uk/biology/biotic and abiotic factors.html, www.internet4classrooms.com **Text Book Page Numbers – 252 & 253**

YEAR 13 -Batch 2 - BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

Work sent through Google classroom/G mail/Online Quiz/ZOOM Learning Platform

Topic 10-Ecosystems [10.1,4,5]

L.O Effect of abiotic factors on populations ,effect of interactions between abiotic and biotic factors on populations**.**

Biology Students Book 2

B2- Sunday – 0 period (Zoom)	**Students able to :** Differentiate between inter and intra specific competition. ●Why do abiotic factors have a major impact on the distribution of all organisms in a habitat ●The extremely low precipitation of subtropical desert biomes might lead one to expect fire to be a major disturbance factor. However, fire is more common in the temperate grassland biome than in the sub tropic desert biome. Why is this**?**● Why is it essential for organisms to maintain a relatively constant body temperature?● Describe adaptations that help the organisms cope with changes in environmental temperature **BOARD WORKS –Ecosystems and populations-No [6-12]** **Video and PPT:** biotic factors **:**www.science.co.uk/biology/biotic and abiotic factors.html, www.internet4classrooms.com **Text Book Page Numbers – 252 & 253**
B2 - Monday – 8th & Thursday 7th period (Zoom)	**Students able to-** Explain the effect of interactions between biotic factors on populations. ●Describe the effect of .interactions between abiotic factors on population. ●Analyze and interpret the graph given for prey-predator relationship ●Predict the effect of biotic & abiotic factors on distribution of organisms **BOARD WORKS –Ecosystem and populations—[-3 -19]** **Video and PPT:** Effect of density dependent and independent factors on populations.: www.science.co.uk/biology/predation an competition.html, www.internet4classrooms.com **BOARD WORKS –Ecosystems and populations-No [6-12]** **Video and PPT:** biotic factors **:**www.science.co.uk/biology/biotic and abiotic factors.html, www.internet4classrooms.com **Text Book Page Numbers – 252 & 253**

YEAR 13 - Batch 1 & 2 - BIOLOGY

WEEK 24 (7th Feb – 11th Feb)

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

Topic 9.1:- Chemical control in plants and mammals

L.O - Describe how plants detect light using photoreceptors and how they respond to environmental cues – Germination & Etiolation and Hormone action in humans

Biology Students Book 2

B2 - Sunday –6th & 7th Period (Zoom) **B1- Monday –1st & 2nd Period (Zoom)**	**Students able to** ●Identify characteristics in plants subjected to Etiolation . ● Describe role of phytochrome in etiolation & germination. and how cellular level. ● Explain effect of phytochrome at cellular level . ●Compare positive & negative feedback mechanism involved in homeostasis. **Resources:** Board works & PPT – Plant responses & Video link **https://www.youtube.com/watch?v=3I2bSMm06IA** **https://www.youtube.com/watch?v=JYwEXSQstEM** **https://www.youtube.com/watch?v=CLv3SkF_Eag** **Students to complete text book questions Pg.191 Q.1&2**
B2 - Monday– 3rd Period (Zoom) **B1- Tuesday – 4th Period (Zoom)**	**Students able to** ● Identify endocrine organs in humans . ● Describe roe of endocrine glands in humans ● Explain role of pituitary and hypothalamus . **Resources:** Board works & PPT –Photoperiodism & Video link **https://www.youtube.com/watch?v=HJI11Fj4jYs** **https://www.youtube.com/watch/BenVSmBG7wU** **Students to complete Exam style text book questions Pg.192 – 193**