YEAR 9 A - F – BIOLOGY

WEEK 33 (2nd May to 6th May)

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

SB 1-Key concepts in biology

L.O : To recall the structure of prokaryotes, eukaryotes &;specialized cells .To review enzymes in digestion, food test , mechanism of enzyme action & transporting substances.

Sunday-Zero period (boys) **Sunday-7th period (girls)**	**Zoom: SB-1a -Microscope, SB-1b-Plant cell, animal cell &SB-1c specialised cells.** **Resources**: Revision worksheets & video links https://www.youtube.com/watch?v=VBdVARYWq1c https://www.youtube.com/watch?v=QCCp-Y_-7J0 https://www.youtube.com/watch?v=UZwT-Jx8LzY&t=34s **Students able to**: ●Differentiate the working of light and electron microscope. .●Calculate the magnification of the specimen viewed using the formula M = O/ A.● Draw a typical animal cell. ●Identify cell structures, including the nucleus, cytoplasm, cell membrane, and vacuole. ●Give **few** differences between the structure of plant and animal cells**.** ●Draw & label the various parts of a sperm cell and egg cell. ●**Describe** how the various parts of an egg cell help in fertilization & formation of an embryo.
Sunday -1st period (boys) **Wednesday-2nd period (girls)**	**Zoom**: **SB-1d-Inside bacteria , SB-1e Enzymes and nutrition & SB-1f Testing foods,** **Resources**:, Revision work sheet &Video Links https://www.youtube.com/watch?v=b15Hy3jCPDs https://www.youtube.com/watch?v=a0yGDipKWlo https://www.youtube.com/watch?v=SqWTJWOBww4 **Students able to:-** ●Draw & label the **major** parts of a bacterial cell. ●State the functions of **major** parts of prokaryote cell. ●**Explain** the role of amylase, pepsin and lipase in digesting food ●Identify the reagents used to test the presence of starch, reducing sugars, proteins and fats in food substances.
Sunday-2nd period (boys) **Wednesday-3rd period (girls)**	**Zoom**: **SB-1g-Enzyme action , SB-1h-Enzyme action& SB-1i Transporting substances** **Resources**: Revision worksheets & Video Links **https://www.youtube.com/watch?v=VNX9UQ08fZ4** **https://www.youtube.com/watch?v=PRi6uHDKeW4** **Students able to:-**

	●Define active site. ●**Explain** the lock & key mechanism**.**● **Describe** the role of temperature& pH on the shape of active site● **Describe** how diffusion favour gaseous exchange**.** ●Define the term osmosis. ●**Give few** differences between the process of osmosis with that of active transport**.** ●Compare the process of osmosis & diffusion ●Define active transport .

YEAR 10 A-F – BIOLOGY

WEEK 33 (2nd May to 6th May)

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

YEAR 9 TOPICS-REVISION

SB-1a-Microscope/SB 1b/c/d-Cells(Plant & Animal/Specialised &Bacterial)

L.O- Explain how changes in microscope technology, including electron microscopy, have enabled us to see cell structures with more clarity and detail than in the past.Explain how the sub-cellular structures of eukaryotic and prokaryotic cells including bacterial and specialized cells are related to their functions.

Sunday – 3rd Period (Boys) **Sunday – 5th Period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Discussion of Revision Worksheet and recap on the given topics.** **Resources:** Worksheet **Students able to:-** Recall **few** parts of a typical microscope **.Differentiate the working of light and electron microscope.** Identify the magnifications of light and electron microscope. Recall the organelles found in a prokaryote cell. Identify **few** similarities & differences of a eukaryote cell with that of a prokaryote cell. State the functions of a bacterial cell including specialized cells like sperm, egg cell.

SB1e,g,h-Enzymes(Nutrition/Action/Activity)/SB 2a&3b-Mitosos& Meiosis

L.O- Explain the mechanism of enzyme action& the effects of temperature, substrate concentration and pH on enzyme activity. Explain the importance of enzymes as biological catalysts. Describe mitosis and meiosis as part of the cell cycle and briefly explain it's stages.

Monday-4th period (Boys) **Tuesday-1st period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Discussion of Revision Worksheet and recap on the given topics.** **Resources:** Worksheet **Students able to:-** **Explain** the lock & key mechanism**. Describe** the role of temperature& pH on the shape of active site? **Explain** the role of amylase, pepsin and lipase in digesting food. **Describe** the various stages of mitosis and meiosis and organize in sequence.

SB1i &8b-Transporting substances/Factors affecting the rate of diffusion/SB1f/SB8a-Testing foods /Efficient transport and exchange

L.O- Explain how substances are transported by diffusion, osmosis and active transport. State the factors affecting the rate of diffusion. Investigate the use of chemical reagents to identify starch, reducing sugars, proteins and fats. Explain how the energy contained in food can be measured using calorimeter. Describe the need to transport substances into and out of a range of organisms and the need for exchange surfaces and a transport system in multicellular organisms including the calculation of surface area : volume ratio

Thursday-1st Period (Boys) **Wednesday-4th period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Discussion of Revision Worksheet and recap on the given topics.** **Resources:** Worksheet **Students able to:-Give few** differences between the process of osmosis with that of active transport**.** Compare the process of osmosis & diffusion. Describe the method used to determine the energy content using calorimetry. Identify starch, reducing sugars, proteins and fats in food substances. State the factors affecting the rate of diffusion. Describe the functions of the substances that are transported into the body.●Calculate surface area : volume ratios.

SB 2b,c-Growth in plants and animals/SB2d,3a- Stem cells &Reproduction(Sexual & Asexual)

L.O- Describe growth in organisms, including a cell division and differentiation in animals & cell division, elongation and differentiation in plants Explain the importance of cell differentiation in the development of specialized cells. Describe the function of embryonic stem cells, stem cells in animals and meristems in plants. Explain some of the advantages and disadvantages of sexual & asexual reproduction

Thursday-2nd Period (Boys) **Tuesday -2nd Period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Discussion of Revision Worksheet and recap on the given topics.** **Resources:** Worksheet **Students able to:-** **Describe** how cell division, elongation & differentiation contribute to the growth and development of an animal & plant. Recall types of stem cells and their characteristic features including differentiation. **Identify** the type of stem cells - embryonic, adult & induced pleuripotent stem cells. Differentiate & Compare sexual & asexual reproduction in organisms.

YEAR 11 A -_F BIOLOGY (GCSE)

WEEK 33 (2nd May to 6th May)

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

Topics –SB9h-Preserving biodiversity,SB9i-Food security, Topic 5k – Antibiotics

Learning objectives

Explain the benefits of maintaining local and global biodiversity, including the conservation of animal species and the impact of reforestation. Describe the biological factors affecting levels of food security. Describe that the process of developing new medicines, including antibiotics, has many stages, including discovery, development, preclinical and clinical testing

Sunday-6th period(girls) & 8th period(boys)	**Zoom session –SB9h-Preserving biodiversity** **Text book pages-192 to 193** **Resources: Board works & Video link** **https://www.youtube.com/watch?v=bs9e6ovISbs** **https://www.youtube.com/watch?v=iTy6O7YtnP4** https://www.youtube.com/watch?v=SROoINlp4VY **Students able to** ●**Identify ways** by which animal species be conserved. ●Describe how organisms are conserved using captive breeding programme . ●Explain how does conservation act protect biodiversity. **Explain** how reforestation affect biodiversity

Monday -3rd period(girls) **Tuesday -5th period (boys)**	**Zoom Session– SB9i-Food security** **Text bookpages 194 to 195** Resources: Board works &Video link https://www.youtube.com/watch?v=nrbJl3R4YJU **https://www.youtube.com/watch?v=fElhrp5460w** **Students able to** ● **Recall** global food security ●**Identify** factors that affect food security. ●How is food security affected by different factors**?** ●**Explain** why biofuels are renewable source of energy. ●Identify **some** advantages & disadvantages of replacing fossil fuels with biofuels. ●**Describe** advantages of growing biofuels
Tuesday-7th & 8th period (girls) **Thursday-5th&6th period (boys)**	**Asynchronous-SB5K-Antibiotics** Research on stages in the normal drug development process.
Wednesday--6th period (boys) & 7th period (girls)	Asynchronous-**SB9h-Preserving biodiversity** Completion of worksheet – Global biodiversity

YEAR 11 G & H – BIOLOGY (IGCSE)

WEEK 33 (2nd May to 6th May)

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

BIOTECHNOLOGY : Unit 6: Using Microorganisms

L.O.: To understand the role of microorganisms in food production.

Sunday- 4th period	**Zoom: Describe** the role of yeast in bread and alcohol production. https://www.youtube.com/watch?v=cYkqY1uwDf8 https://www.youtube.com/watch?v=attjGTuC09U **Resources**: Video Links, Powerpoint & textbook. **Students able to:** ●**Define** anaerobic respiration. ●**Identify** the kingdom that yeast belongs to. ●**Name** the products of fermentation by yeast. ●**Explain** the role of yeast in the production of food including bread.
Monday- 7th period	**Asyn GC: Describe** the role of yeast in bread and alcohol production. **Resources**: Worksheet & textbook. Students answers questions of the WS on Yeast and Bread making and turn in their work on GC.
Tuesday – 3rd and 4th period	**Zoom: Describe** the construction of an industrial fermenter. **Describe** the role of bacteria in yoghurt production. https://www.youtube.com/watch?v=hYlNIuiTm4k https://www.youtube.com/watch?v=Ii-RkMwFSlQ **Resources**: Video Links, Powerpoint & textbook. **Students able to:** ●**List** the conditions that are required to be maintained in a fermenter for industrial processes. ●**Explain** the importance of an industrial fermenter. ●**Justify** the use of aseptic techniques for the growth of microorganisms. ●**Explain** the role of bacteria (*Lactobacillus*) in the production of yoghurt. **Asyn GC:** Students answers questions of the WS on Bacteria and Yoghurt and turn in their work on GC.
Wednesday – 5th period	**Asyn GC:** Research about the importance of microorganisms in industries (other than bread, alcohol and yoghurt) and create a web diagram and turn in their work.

YEAR 12 - Batch 1 - BIOLOGY

WEEK 33 (2nd May to 6th May)

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

Topic 2 – Cells & Viruses

L.O – Recall cellular organization of prokaryotes and eukaryotes .Structure and life cycle of virus .Spread , control and cure of viral diseases.

Biology Students Book 1

B1- Tuesday– 4th period(Zoom) **B1- Thursday– 1st period(Zoom)**	**Zoom discussion of revision sheet** **Students able to** ●Compare structure of prokaryote and eukaryote . ● Describe structure of organelles related to its function ●Calculate Magnification & recall use of microscope and cytological techniques ●Explain cause, spread and control of viral diseases **Resources:** Revision worksheet – Cells and Viruses https://www.youtube.com/watch?v=W_geqbT3KUc&t=142s https://www.youtube.com/watch?v=BG-G6nRIpcw https://www.youtube.com/watch?v=3LIZBn7bS4s https://www.youtube.com/watch?v=s8jhJXgC-bk https://www.youtube.com/watch?v=8sipX86JfUw&t=497s **Students to complete revision worksheet on** Cells and Viruses
B1- Thursday–2 nd period(GC)	**Students to complete revision worksheet on Cell division & sexual reproduction**

YEAR 12 - Batch 2 - BIOLOGY

WEEK 33 (2nd May to 6th May)

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

Topic 2 – Cells & Viruses

L.O – Recall cellular organization of prokaryotes and eukaryotes .Structure and life cycle of virus .Spread , control and cure of viral diseases. Production of plant based vaccine to cure infectious diseases

Biology Students Book 1

B2- Monday – 5th period(Zoom)	**Zoom discussion of revision sheet** **Students able to** ●Compare structure of prokaryote and eukaryote . ● Describe structure of organelles related to its function ●Calculate Magnification & recall use of microscope and cytological techniques ●Explain cause, spread and control of viral diseases **Resources:** Revision worksheet – Cells and Viruses https://www.youtube.com/watch?v=W_geqbT3KUc&t=142s https://www.youtube.com/watch?v=BG-G6nRIpcw https://www.youtube.com/watch?v=3LIZBn7bS4s https://www.youtube.com/watch?v=s8jhJXgC-bk https://www.youtube.com/watch?v=8sipX86JfUw&t=497s **Students to complete revision worksheet on** Cells and Viruses
B2- Monday –8th period(Zoom)	**Students able to** ●Recall role of vaccine in immune response. ● Describe Agroinfiltration technique to produce plant based vaccines ●Evaluate use of plant based vaccines **Resources:** PPT & video on Agroinfiltration **Students to complete the task assigned and turn in GC**
B2- Wednesday– 5th period(GC)	**Students to complete revision worksheet on Cell division & sexual reproduction**

YEAR 12 B1 &B2- BIOLOGY

WEEK 33 (2nd May to 6th May)

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

Topic - 4.4-Transport in Plants

L.O – Explain The strengths and weaknesses of the mass flow hypothesis in explaining the movement of sugars through phloem tissue

Biology Students Book 1

B1- Sunday – 8th period[ZOOM] **B2- Tuesday – 3rd period [ZOOM]**	**Revise the concepts in 4.3 and discussion of exam style questions and clarification of doubts.** **Exam style questions-. Text Book Page Numbers – 274 & 275**
B1 - Monday – 1st & 2nd period (Zoom) **B2- Thursday – 5th and 6th period(Zoom)**	**Students able to** ●Define mass flow hypothesis. ●Interpret the evidence for transport through xylem using dyes & phloem using aphids and radioactively labeled carbon. ●Differentiate between transpiration, translocation and guttation in plant●Differentiate passive mass flow and pressure flow hypothesis **BOARD WORKS** –Transport in plants No[-15 -20] **Video and PPT**: Translocation in plants :www.science.co.uk/biology/translocation..html, www.internet4classrooms.com **Read Turgeon, R. The Puzzle of Phloem Pressure. *Plant Physiology* 2010 vol. 154 no. 2, pages 578–581 (available online).** Distil the *Wikipedia*® entry on the pressure flow hypothesis to 10 bullet points. ● Read Knoblauch, M. & Oparka, K. The structure of the phloem – still more questions than answers. *Plant Journal*. Volume 70, Issue 1, pages 147–156, April 2012 (available online). Add to your notes on the weaknesses of the pressure flow hypothesis.. **Text Book Page Numbers – 287-289**

YEAR 13 B1 & B2- BIOLOGY

WEEK 33 (2nd May to 6th May)

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

L.O –Revise and recall the concepts related to Nitrogen cycle –case study

Biology worksheet file, past papers and text book,

B1- Tuesday – 3rd period (GC) **B2- Sunday – 0 period (GC)**	**Asynchronous learning-Class work** **Case study-Dust and nitrogen fixation ,analyse and evaluate the advantages and disadvantages based on the case study given and task to be turned in Google classroom** **Resources:** Case study and worksheets based on nitrogen cycle **Students able to analyse and evaluate the concepts on nitrogen cycle**
B1- Thursday – 1st and 2nd period(GC) **B2 - Monday – 8th & Thursday 7th period (GC)**	. **Asynchronous learning-Research work** **Significance of nanotechnology in Biomedical Sciences ,analyse and evaluate the advantages and disadvantages** **and task to be turned in Google classroom**

YEAR 13 Batch 1& 2 - BIOLOGY

WEEK 33 (2nd May to 6th May)

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

Topic 9.2 – 6:- CNS- Brain & spinal cord

L.O –. Research and evaluate techniques used to treat spinal cord injuries

Biology Students Book 2

B2 - Sunday –6th & 7th Period (GC) **B1- Monday –1st & 2nd Period (GC)**	**Students able to** ● Identify cause of spinal cord injuries ● Describe techniques used to cure spinal cord injuries with reference to the activity pg.216 & 217 **Resources:** Think bigger Activity – The paralysed man who walked again **Students to complete Qn 1-6 of think Bigger activity pg.217**
B2 - Monday– 3rd Period (GC) **B1- Tuesday – 4 th Period (GC)**	**Students able to** ● Investigate main causes of spinal cord injury ● Research more into techniques used for treating spinal cord injuries **Resources:** Think bigger Activity – The paralysed man who walked again **Students to complete Activity a & b of think Bigger activity pg.217**