YEAR 9 A -F – BIOLOGY

WEEK 28 (7th March to 11th March)

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

Topics: SB2b-Stem cells.

L.O.: Describe the function of embryonic stem cells, stem cells in animals and meristems in plants. Discuss the potential benefits and risks associated with the use of stem cells in medicine.

Sunday-Zero period(boys) **Sunday-7th period(girls)**	**Zoom: Assessmen (15 marks): Cell Cycle & Mitosis**
Sunday -1st period(boys) **Wednesday-2nd period (girls)**	**Zoom: Describe** the function of embryonic stem cells, stem cells in animals and meristems in plants and the potential benefits and risks associated with the use of stem cells in medicine. **Resources**: Textbook, Video Links & Power point. https://www.youtube.com/watch?v=i2pyDBMglfM https://www.youtube.com/watch?v=Kh27eyjxvYM Textbook page : 36-37 **Students able to:-** ●**Differentiate** terms pleuripotent, multipotent and totipotent giving suitable examples. ●**Explain** the role of stem cells in plants. ●**Describe** the use of stem cells in curing diseases – Diabetes, Parkinsons disease, organ transplants. ●**Discuss the ethics** of the use of stem cells.
Sunday-2nd period(boys) **Wednesday -3rd period(girls)**	**GC:** Students write answers to WS qns on cell differentiation and turn in their work on GC. **Resources:** Worksheet

YEAR 10 A-F – BIOLOGY

WEEK 28 (7th March to 11th March)

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

Sunday – 3rd Period (Boys) **Sunday – 5th Period (Girls)**	**Zoom Session/Google Meet: Assessment-1 (15 marks)** Topics SB4d- Classification & SB4e-Breeds & Varieties- Selective Breeding

SB3k-Variation

L.O- State that most phenotypic features are the result of multiple genes rather than single gene inheritance.

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=_LoPYfhTgeI https://www.youtube.com/watch?v=jUHokSPkzT8&t=142s Read Text book Page-72 Read Page 72 and complete 1-3 qns **Resources:** PowerPoint /Board work &Video link **Students able to:-** ●Differentiate single gene inheritance& multiple gene inheritance.●List **few** examples single gene inheritance& multiple gene inheritance in humans .●Types of variation with examples.

SB3k-Variation

L.O- Describe the causes of variation that influence phenotype, including **i)** genetic variation – different characteristics as a result of mutation and sexual reproduction **ii)** environmental variation – different characteristics caused by an organism's environment (acquired characteristics)

Thursday-1st Period(Boys) **Tuesday -2nd Period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Students must watch the video link given below on** https://www.youtube.com/watch?v=MHx_I-pIkzc https://www.youtube.com/watch?v=MT8Mvcn_HUM Read Text book Page-73 Read Page 73 and complete 4,5,Exam style question,S1 &E1 **Resources:** PowerPoint /Board work &Video link **Students able to:-** ●List **few** examples showing environmental influence on variations in certain traits. ●Predict **few** factors causing genetic variations. ●**Describe** how sexual reproduction results in variation **.**
Wednesday-4th period (Girls) **Thursday-2nd Period (Boys)**	**GOOGLE CLASSROOM** **Students to complete the** Text book Pages-72-73 **and turn in the work within the assigned period.**

YEAR 11 A -F - BIOLOGY (GCSE)

WEEK 28 (7th March to 11th March)

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

Topics–SB1.Key concepts in biology, SB2-Cell & control, SB3-Genetics & SB4-Natural selections & Genetic modifications.

L.O: Compare the structure of prokaryotes and eukaryotes & specialized cells in plants and animals .Review enzymes in digestion, food test , mechanism of enzyme action& transporting substances. Describe the parts and functions of nervous system and eye**.** Explain the stages of mitosis & meiosis, structure of DNA, Protein synthesis ,inheritance, Darwin 's theory of evolution, classification, genetic engineering, cloning and biological control.

Biology Worksheet File- Past paper questions

Sunday-6 th period(girls) **Sunday-8 th period(boys)**	**Zoom session-SB1- Key concepts in biolgy (Revision)** **Text book pages 1 to 28** **Resources:** Video link & past papers **Revision worksheet – Topic SB1- past papers** **https://www.youtube.com/watch?v=ApvxVtBJxd0** **https://www.youtube.com/watch?v=Rfvh4LIsEEM** **https://www.youtube.com/watch?v=ywIVrkHru2s** **https://www.youtube.com/watch?v=VBdVARYWq1c&t=142s** **Students able to recall** ●How the sub-cellular structures of eukaryotic and prokaryotic cells are related to their functions ●How changes in microscope technology, including electron microscopy, have enabled us to see cell structures with more clarity and detail than in the past. ●Effects of temperature, substrate concentration and pH on enzyme activity● Explain how substances are transported by diffusion, osmosis and active transport
Monday -3 rd period(girls) **Tuesday -5 th period (boys)**	**Zoom session –SB2-Cells &Control (Revision)** **Text book pages 30 to 48** **Resources: Video link & past papers** **Revision worksheet – Topic SB2- past papers**

	https://www.youtube.com/watch?v=DwAFZb8juMQ&t=9s https://www.youtube.com/watch?v=11QOg4dLa3U&t=4s https://www.youtube.com/watch?v=3oEanVzzvKk https://www.youtube.com/watch?v=btdVcSLTfDk https://www.youtube.com/watch?v=9SGAicn9rXY **Students able to recall** ●Mitosis as part of the cell cycle including the stages interphase, prophase, metaphase, anaphase and telophase and cytokinesis.● Importance of cell differentiation in the development of specialized cells ●Structure and functions of the spinal cord and the brain including the cerebellum, cerebral hemispheres and medulla oblongata ●Structure and function of sensory neurones, motor neurons and synapses in the transmission of electrical impulses including the axon, dendron, myelin sheath and the role of neurotransmitters● Defects of the eye including cataracts, long-sightedness, short-sightedness and colour blindness.
Tuesday-7 th period(girls) Wednesday-6 th period(boys)	**Zoom Session–SB3-Genetics (Revision)** **Text book pages 50 to 72** **Resources: Video link& past papers** **Revision worksheet – Topic SB3- past papers** https://www.youtube.com/watch?v=nMEyeKQClqI https://www.youtube.com/watch?v=o_-6JXLYS-k https://www.youtube.com/watch?v=gjQBVSnycKc https://www.youtube.com/watch?v=EBJHj1cRPIw **Students able to recall** ● DNA as a polymer made up of .two strands coiled to form a double helix strands linked by a series of complementary base pairs joined together by weak hydrogen bonds, nucleotides that consist of a sugar and phosphate group with one of the four different bases attached to the sugar ●DNA of a gene can affect phenotype by influencing the binding of RNA polymerase and altering the quantity of protein produced. ● Monohybrid inheritance using genetic diagrams, Punnett squares and family pedigrees ● Inheritance of the ABO blood groups with reference to codominance and multiple alleles.

Tuesday -8 th period(girls) Thursday-5 th period(boys)	**Zoom session-SB4-Natural selection and Genetic modification,** **Text book pages 75 to 92** **Resources:** Video link & past papers **Revision worksheet – Topic SB4- past papers** https://www.youtube.com/watch?v=vnktXHBvE8s https://www.youtube.com/watch?v=MBJp3CCqrxg https://www.youtube.com/watch?v=3IsQ92KiBwM https://www.youtube.com/watch?v=3IsQ92KiBwM **Students able to recall** ● Darwin's theory of evolution by natural selection ● Evidence for human evolution based on stone tools, ● The emergence of resistant organisms supports Darwin's theory of evolution including antibiotic resistance in bacteria plants and domesticated animals● Benefits and risks of genetic engineering and selective breeding in modern agriculture and medicine, including practical and ethical implications.
Wednesday-7 th period (girls) Thursday -6 th period(boys)	**Google classroom** Students to complete the text book questions on page 188 - 191& turn in their work in **GC** .

YEAR 11 G /H – BIOLOGY (IGCSE)

WEEK 28 (7th March to 11th March)

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

REVISION : Units 1 & 2: Organisms And Life Processes & Animal Physiology

L.O: Recall the various living processes in organisms and Compare the characteristic features of eukaryotic and prokaryotic organisms. Identify the reagents used to test the presence of starch, reducing sugars, proteins and fats in food substances. Explain the role of enzymes as biological catalysts in metabolic reactions and the processes of diffusion, osmosis and active transport by which substances move into and out of cells

Sunday- 4th period	**Zoom: Discuss** the various living processes in organisms , compare the characteristic features of eukaryotic and prokaryotic organisms & **Identify** the reagents used to test the presence of starch, reducing sugars, proteins and fats in food substances. **Resources**: Worksheet, Video Links & Power point. https://www.youtube.com/watch?v=URUJD5NEXC8&t=336s Revision Worksheets **Students able to:** ●Identify **few** similarities & differences of a eukaryote cell with that of a prokaryote cell. ●**Describe** the functions of cell organelles- cell membrane, cytoplasm, cell wall, ribosomes, nucleus, mitochondria, vacuole & chloroplast. ●**Compare** the structure of plant & animal cell.
Monday- 7th period	**Zoom: Discuss** the role of enzymes as biological catalysts in metabolic reactions. **Resources**: Worksheet, Video Links & Power point. https://www.youtube.com/watch?v=28M_vHpo0BY&t=410s Revision Worksheets **Students able to:** ●**Define** active site .●**Explain** the lock & key mechanism**.** ●**Describe** the role of temperature& pH on the shape of active site. ●**Predict** how temperature affect the rate of enzyme action.

Tuesday – 3rd and 4th period	**Zoom: Discuss** the role of enzymes as biological catalysts in metabolic reactions and the processes of diffusion, osmosis and active transport by which substances move into and out of cells. **Resources**: Worksheet, Video Links & Power point. https://www.youtube.com/watch?v=4xYwHZZk03A&t=241s Revision Worksheets **Students able to:** ●**Give few** differences between the process of osmosis with that of active transport**.** ●**Compare** the process of osmosis in plant cell & animal cells .●**Identify** few factors required for active transport. ●**Describe** the mechanism of active transport.
Wednesday – 5th period	**GC:** Students complete Revision WS questions on Unit 2: Animal Physiology and turn in their work on GC **Resources**: Worksheet: Animal Physiology

YEAR 12 B1& B2- BIOLOGY

WEEK 28 (7th March to 11th March)

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

Topic 4.3-Circulation-4.3.4-Blood circulation 4.3.5-Human heart

L.O – Understand the structure of the arteries, veins and capillaries. Describe the structure of the heart and Explain the sequence of events of the cardiac cycle

Biology Students Book 1

B1- Sunday – 8th period [Zoom] **B2- Tuesday – 3rd period [Zoom]**	**2nd term assessment -20 marks** Topic-4.1-Cell transport mechanisms [Page numbers-212 to 221]
B1 - Monday – 1st (Zoom) & 2nd period (GC) **B2- Thursday – 5th(Zoom) and 6th period(GC)**	**Students able to** ●**Describe** the functions of SA node and AV node. ●Give reason why does left ventricle need to generate more pressure than right ventricle. ●Compare the external and internal structure of the mammalian heart .●**Explain** the differences in the thickness of the walls of the different chambers in terms of their functions **Resources/Materials**: **BOARD WORKS – BOARD WORKS –The heart No[9-19]** **Video and PPT: Structure and functions of heart.** **:**www.science.co.uk/biology/mammalian heart.html, www.internet4classrooms.com Visit www.nobelprize.org and search for 'ECG' for more detail on how ECGs work and an ECG diagnosis game. For an animation to show the electrical activity ofthe heart and ECG, visit www.nhlbi.nih.gov and follow 'Public' then 'Health Topics', then click on'How the Heart Works' and 'Electrical System'. Visit www.nhlbi.nih.gov/health and search for 'heart contraction' for a useful animation : Analyze and interpret the graph showing the changes in the blood pressure that occur in the left side of the heart during a single cardiac cycle. you discover **Text Book Page Numbers – 254 & 257**

YEAR 12 - Batch 1 - BIOLOGY

WEEK 28 (7th March to 11th March)

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

Topic 2 . 4 - 4 – Fertilisation in plants and mammals

L.O – Discuss Fertilisation in plants and animals .

Biology Students Book 1

B1- Tuesday– 4th period(Zoom)	**Assessment 1 :** **Topic 2.3 1 - Cell cycle Topic 2.3 2- Mitosis Topic 2.4 1- Sexual reproduction & meiosis** **Students to complete the assessment and turn in as pdf in GC**
B1- Thursday– 1st & 2 nd period(Zoom)	**Students able to** ●**Describe** double fertilization in plants forming diploid zygote & triploid endosperm ●**Define** key terms-heterostyly, dichogany, monoecious, capacitation, acrosome reaction, cortical reaction & polyspermy ●**Compare** double fertilization, external & internal fertilization in organisms. ● **Explain** stages of fertilization in humans- capacitation, acrosome reaction, cortical reaction, fusion of male & female pronuclei **Resources:** Boardworks & PowerPoint - Fertilisation & Video link https://www.youtube.com/watch?v=y-emlY6DBH8 https://www.youtube.com/watch?v=_5OvgQW6FG4 https://www.youtube.com/watch?v=W3lS2AnrXFI **Students to complete text book questions – pg.142**

YEAR 12 - Batch 2 - BIOLOGY

WEEK 28 (7th March to 11th March)

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

Topic 2 . 4 - 2 – Chromosome mutations & Topic 2 . 4 - 5 – Embryo Development in mammals

L.O – Discuss translocation & non-disjunction that lead to polysomy & monosomy.and early development of the human embryo to the blastocyst stage

Biology Students Book 1

B2- Monday – 5th &8th period(Zoom)	**Students able to** ●**Identify** insertion, deletion, translocation & inversion that causes chromosome mutation ●**Define** key terms-non disjunction, monosomy, polysomy, aneuploidy ●**Compare** Downs Syndrome, Jacobs syndrome ,Klinifelter's Syndrome & Turners Syndrome . ●**Evaluate** factors affecting mutation rate **Resources:** Boardworks & PowerPoint - Chromosome mutation & Video link **https://www.youtube.com/watch?v=py3u9lINLWQ** **https://www.youtube.com/watch?v=WvV89IN6lv8** **https://www.youtube.com/watch?v=V49g3Vj9RS8** **https://www.youtube.com/watch?v=py3u9lINLWQ** **Students to complete text book questions – pg.134** **Research on other chromosome abnormalities in humans**
B2- Wednesday– 5th period(Zoom)	**Students able to** ● **Identify** stages of early embryonic development –morula, blastula & blastocyst ● **Describe** the changes from zygote upto balstocyst during early embryonic development ● **Explain** changes in potency of cells during embryonic development ● **Evaluate** methods of treating infertility-IVF,embryo transfer & blastocyst transfer **Resources:** PowerPoint - Early embryonic development & Video link https://www.youtube.com/watch?v=uP7IHXAaJq4 https://www.youtube.com/watch?v=1zpV5rzWXMA https://www.youtube.com/watch?v=P27waC05Hdk **Students to complete text book questions – pg.145**

YEAR 13 B1 & B2- BIOLOGY

WEEK 28 (7th March to 11th March)

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

Topic -6 Microbiology and pathogens, Topic -8-Origins of genetic variation &

Topic -10-Ecosystems

L.O –Revise and recall the concepts related to Microbiology and pathogens Origins of genetic variation and Ecosystems

Biology worksheet file, past papers and Students text book (2)

B1- Tuesday –5 th period (Zoom) **B2- Sunday – 0 period (Zoom)**	Zoom discussion and revision of concepts based on bacteria and disease .Non bacterial pathogens and the response to the infection. **Resources:** Worksheets and Text book Page numbers-42 to 90 **Students able to** Recall measuring the growth of bacterial cultures ,treating fungal ,viral and bacterial diseases. Specific and non specific response to infection.
B1- Thursday – 1st and 2nd period(Zoom) **B2 - Monday – 8th & Thursday 7th period (Zoom)**	Zoom discussion and revision of concepts based on Origins of genetic variation and ecosystems. Text book pages -136 to 172 **Resources:** Worksheets and Text book Page numbers-244 to 280 **Students able to** Recall genetics, gene linkage ,pedigree diagrams ,human genetics. ecosystems and factors affecting ecosystems efficiency of ecosystems . trophic levels .energy transfer and nutrient cycling

YEAR 13 B1& B2 - BIOLOGY

WEEK 28 (7th March to 11th March)

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

Topic 9.2 – Mammalian Nervous system & Topic 9.3 – Osmoregulation

L.O – Recall transmission of nerve impulse, synaptic transmission, working of photoreceptors & osmoregulation

Biology Students Book 2

B2 - Sunday –6th & 7 th Period (Zoom) **B1- Monday –1st & 2nd Period (Zoom)**	**Discussion of revision worksheet on Nervous system** **Students able to** ● Compare transmission of nerve impulse transmission & synaptic transmission ● Describe mechanism of photoreception, iris pupil reflex & accomodation by human eye ● Explain how drugs & neurotransmitters affect nerve impulse transmission & synaptic transmission ● Differentiate EPSP, IPSP, generator potential & action potential **Resources:** Video link https://www.youtube.com/watch?v=40B_uA8901U&list=PLkocNW0BSuEEMyVUCyaRPVj_cahCvjxAr&index=74 https://www.youtube.com/watch?v=3A0vUfu-78A&list=PLkocNW0BSuEEMyVUCyaRPVj_cahCvjxAr&index=80 **Students to do exam style Questions Topic 9.2-pg.218&219**
B2 - Monday– 3rd Period (Zoom) **B1- Tuesday – 4 th Period (Zoom)**	**Discussion of revision worksheet on Co ordination and control** **Students able to** ● Identify parts and functions of the various parts of the human excretory system ● Describe formation of urea in liver & urine in nephron ● Explain the countercurrent mechanism & negative feedback mechanism related to osmoregulation ●Compare working of cortical & juxtamedullary nephron **Resources:** Video link https://www.youtube.com/watch?v=40B_uA8901U&list=PLkocNW0BSuEEMyVUCyaRPVj_cahCvjxAr&index=74 https://www.youtube.com/watch?v=TrbsAhpEnJ0&list=PLkocNW0BSuEEMyVUCyaRPVj_cahCvjxAr&index=75 **Students to do exam style Questions Topic 9.3-pg.242&243**